



SERVICE NOTES

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SPECIFICATIONS

VK-9 (ORGAN + STAND)

- KEYBOARD

Upper manual: 61 notes (C scale)
Lower manual: 61 notes (C scale)
Pedal board: 25 notes (C scale)

- MANUAL DRAWBAR

I, II, III, IV, each with
6-2/5' (I only), 16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'

- BASS DRAWBAR

Flute 16', 8'; Bright 8'

- PRESET

Upper manual: I - Chime; II - Trumpet;
III - Full Tibias; IV - Theater Brass
Lower manual: I - Dulciana; II - Open Diapason;
III - Full Accompaniment; IV - Bombarde

* Each timbre is readjustable.

- PERCUSSION

Click attack; Decay fast; 2ND (4'); 3RD (2-2/3'); 5TH
(1-3/5'); Volume soft

- EXTERNAL SYNTHESIZER PORTAMENTO

Time; Flyback

- UPPER SUSTAIN I, II

- PERCUSSION/SUSTAIN SELECTOR

- BASS

Lower To Pedal; Pedal To Lower; Envelope I, II

- REVO CONTROL

Revo (Leslie) Cancel; Chorus; Slow; Fast

- VIBRATO

Chorus/Vibrato; Depth I, II
VIBRATO & REVO: Lower; Upper

CONNECTION SOCKETS

- OUTPUT

Revo (8P); Leslie (9P); Normal; Bass

- EXTERNAL EFFECTS

Upper (Send/Return)

Lower (Send/Return)

Bass (Send/Return)

- EXTERNAL INPUT

Before Expression; After Expression

- EXTERNAL SYNTHESIZER CONTROL JACKS

KCV/GATE

- OTHERS

Brilliance; Pedal Connector; Output Level Changeover
Switch; Drawbar Selector (I, II, III); Volume; Organ Tune;
Power Switch

- POWER CONSUMPTION

37W

- DIMENSIONS

1,290(W) x 270/1,000(H, excl/incl stand) x 745(D)mm
50.8(W) x 10.6/39.4(H, excl/incl stand) x 29.4(D)in

- WEIGHT

72.6kg, 160lbs.

- ACCESSORY

Exclusive stand

VKP-9 (PEDAL BOARD + EXPRESSION PEDAL)

- KEYBOARD

25 notes (C scale)

- DIMENSIONS

1025/750(W) x 145/102(H) x 930(D)mm
40.3/29.6(W) x 5.7/4.2(H) x 36.6(D)in

- WEIGHT

45kg, 99lbs

- ACCESSORY

Exclusive expression pedal (Weight: 200g, 0.44lbs); Vinyl
cover; Connection cord

VKB-9 (BENCH)

- SEAT

- STAND

- BACK RAIL

- KNOB BOLT

- ASSEMBLY DIMENSIONS

1,080(W) x 95/180(H) x 400(D)mm
42.5(W) x 3.7/7.1(H) x 15.8(D)in

- WEIGHT

10.5kg, 23.2lbs

VKE-1 (EXPRESSION PEDAL)

- CONNECTION CORD

- DIMENSIONS

158(W) x 95/180(H) x 290(D)mm
6.2(W) x 3.7/7.1(H) x 9.5(D)in.

* Specifications are subject to change without notice.

NOTES:

1. UNLESS OTHERWISE SPECIFIED

ALL RESISTOR VALUES ARE IN OHMS, 1/4WATT, $\pm 5\%$.

ALL CAPACITOR VALUES ARE IN MICROFARADS.

2. PARTS SYMBOL UNLESS OTHERWISE SHOWN, ARE AS FOLLOW.



2SA733P



2SA640



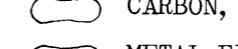
2SC945P



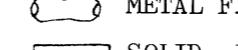
2SC1222



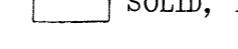
2SK30AGR



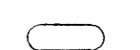
CARBON, 1/4W, $\pm 5\%$



METAL FILM, 1/4W, $\pm 1\%$



SOLID, 1/2W, $\pm 10\%$



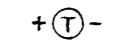
MYLAR



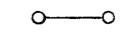
CERAMIC



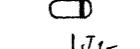
ELECTROLYTIC



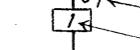
TANTALUM



JUMP WIRE



1S2473



CONNECTOR NO.

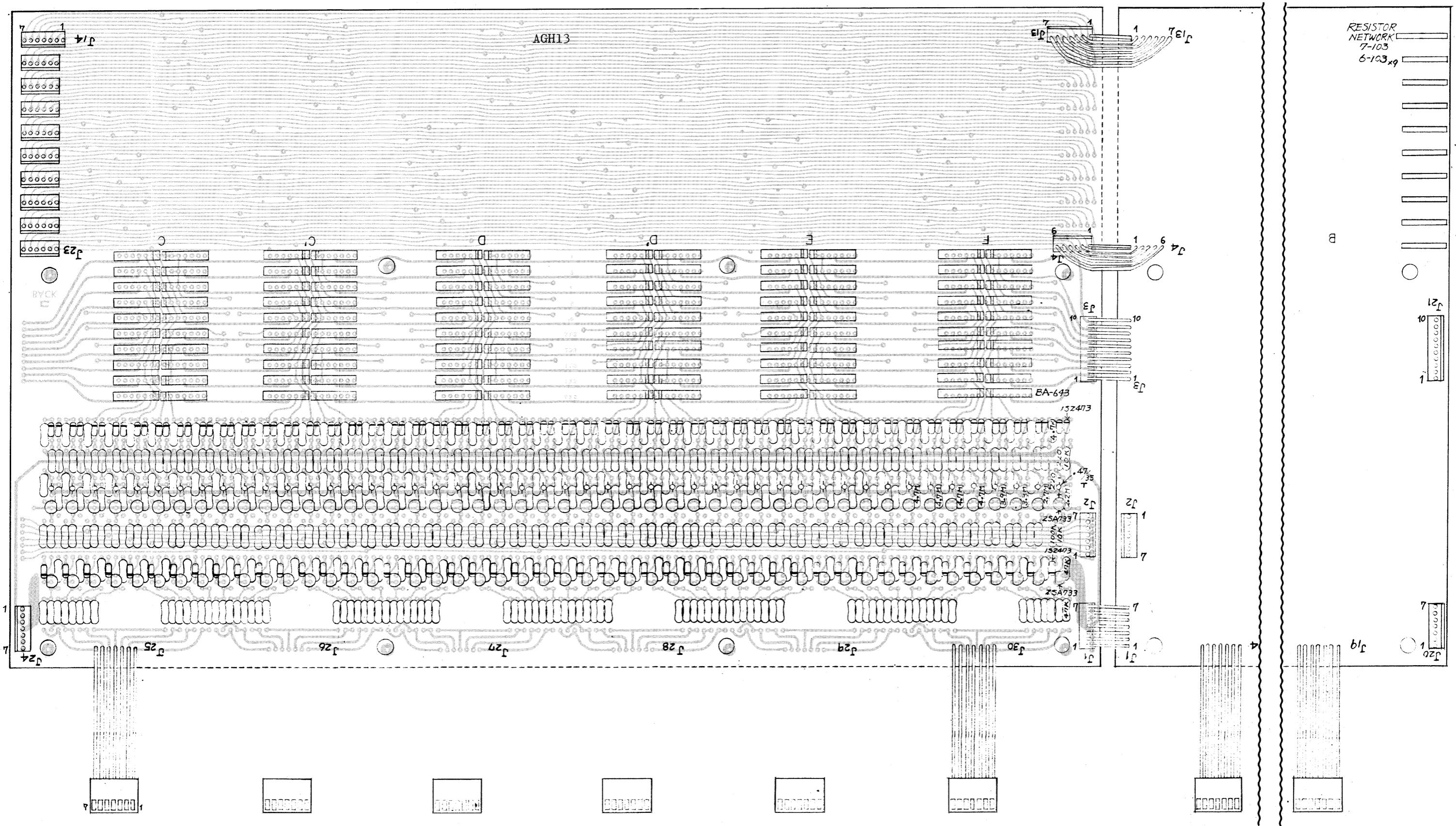


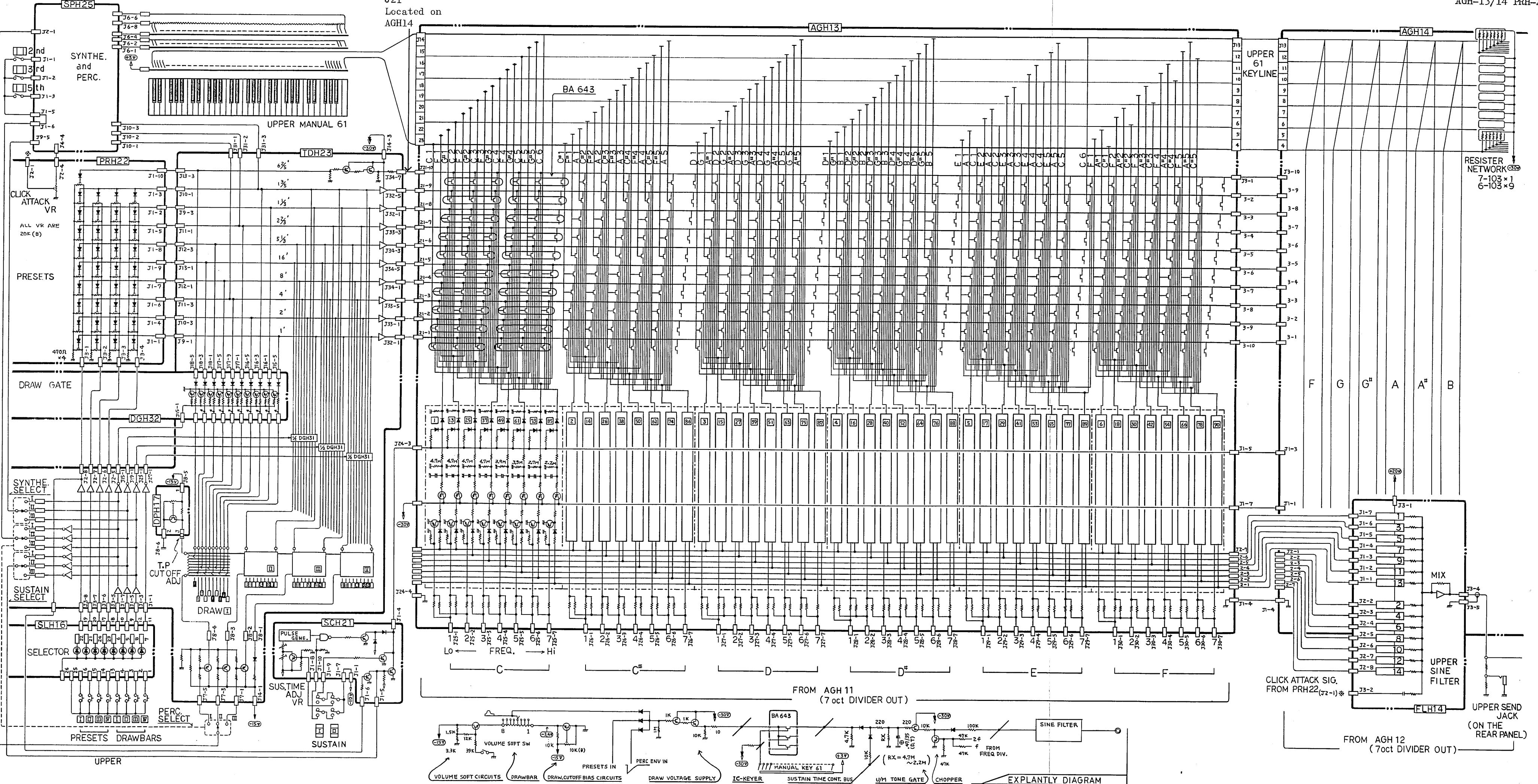
PIN NO.

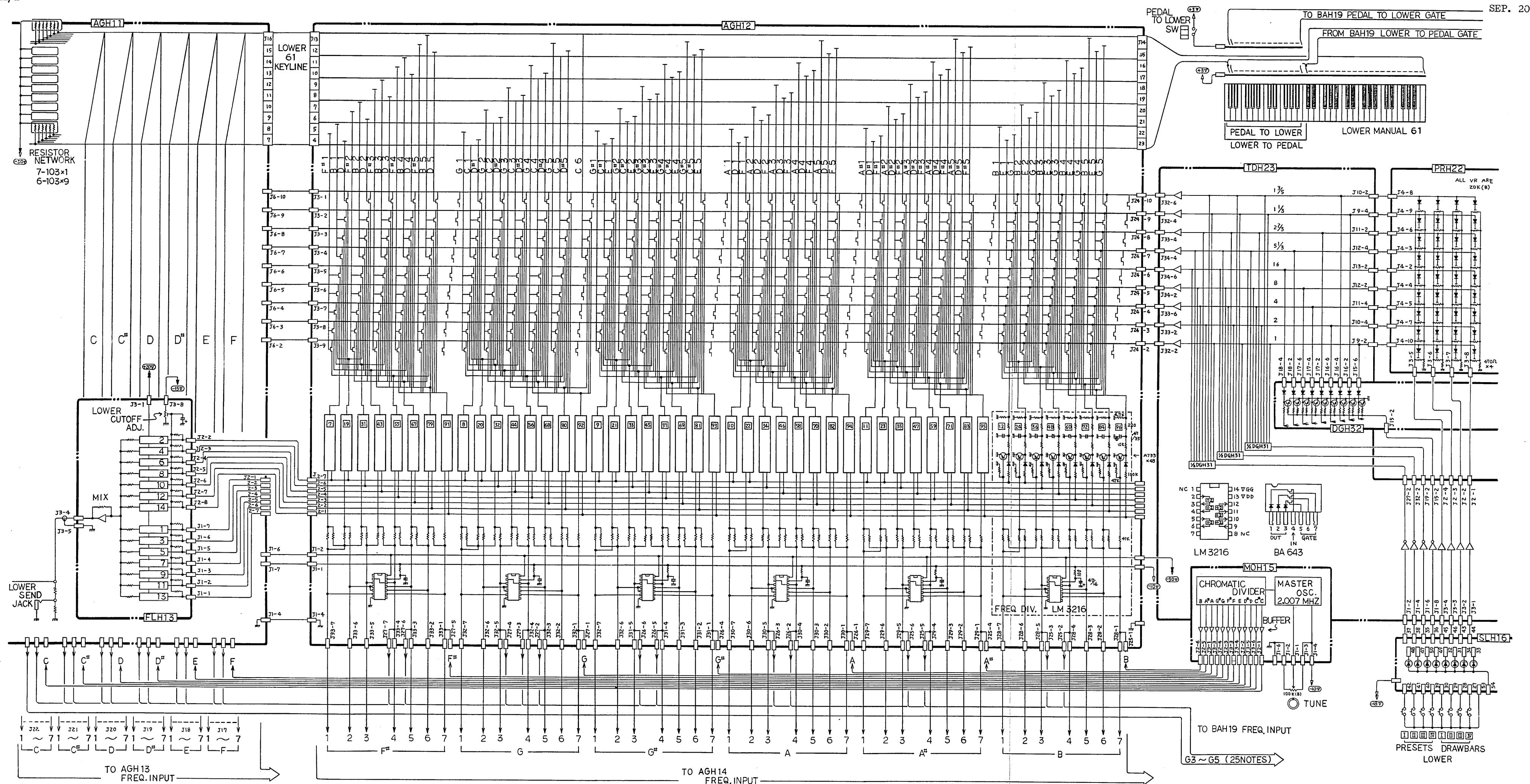
UPPER KEYBOARD KEYING IC TONE GATE

AGH-13 (144H013)

AGH-14 (144H014)



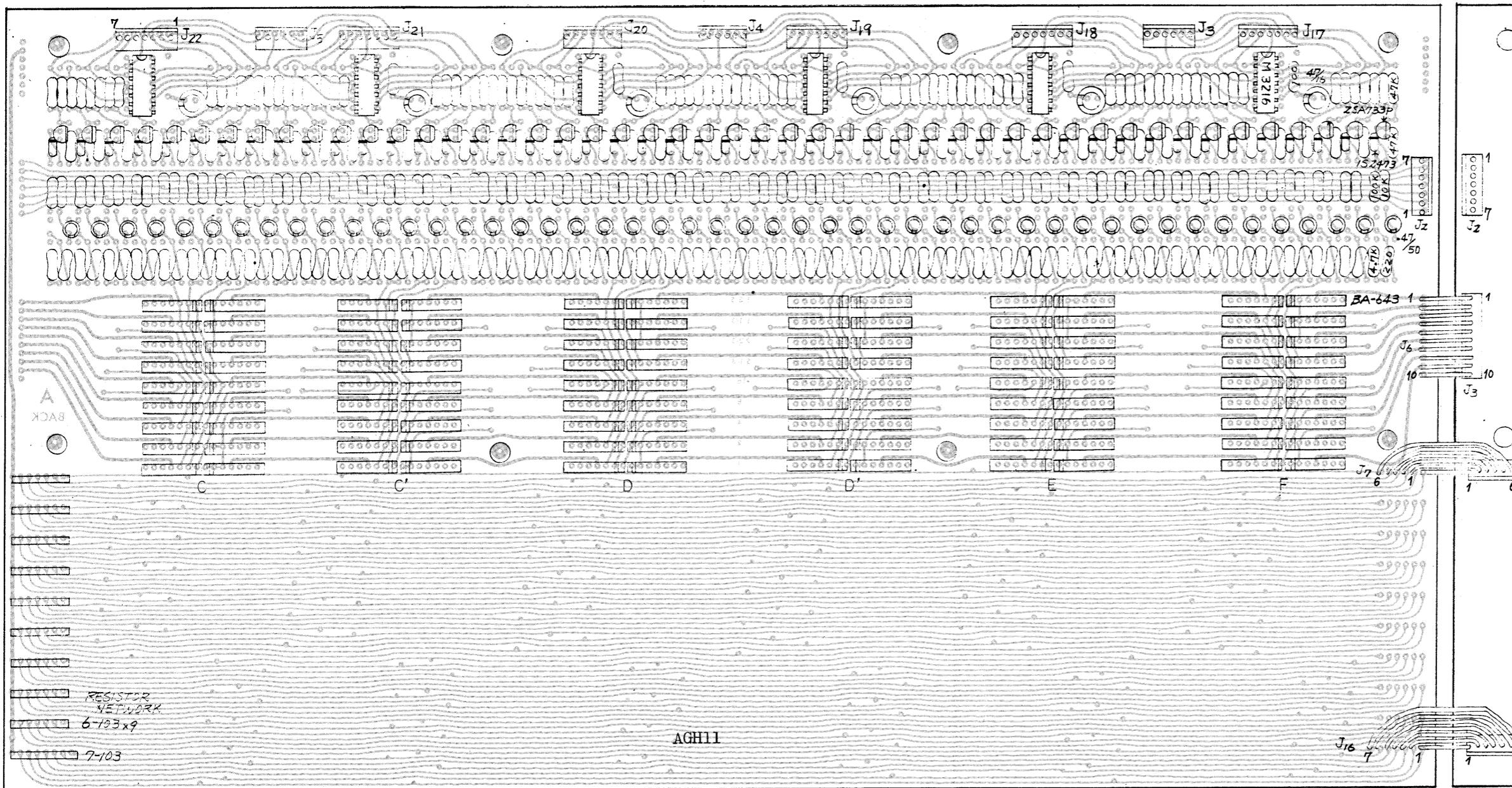




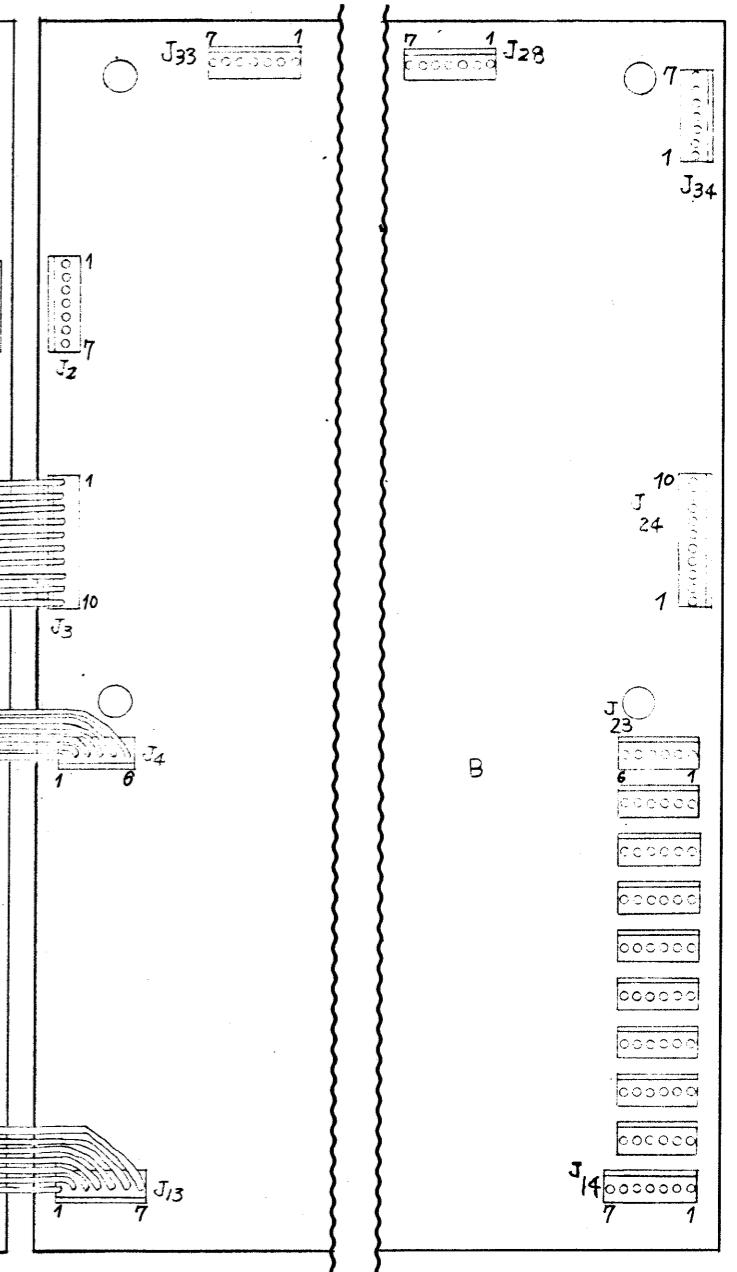
SEP. 20 1978 VK-9

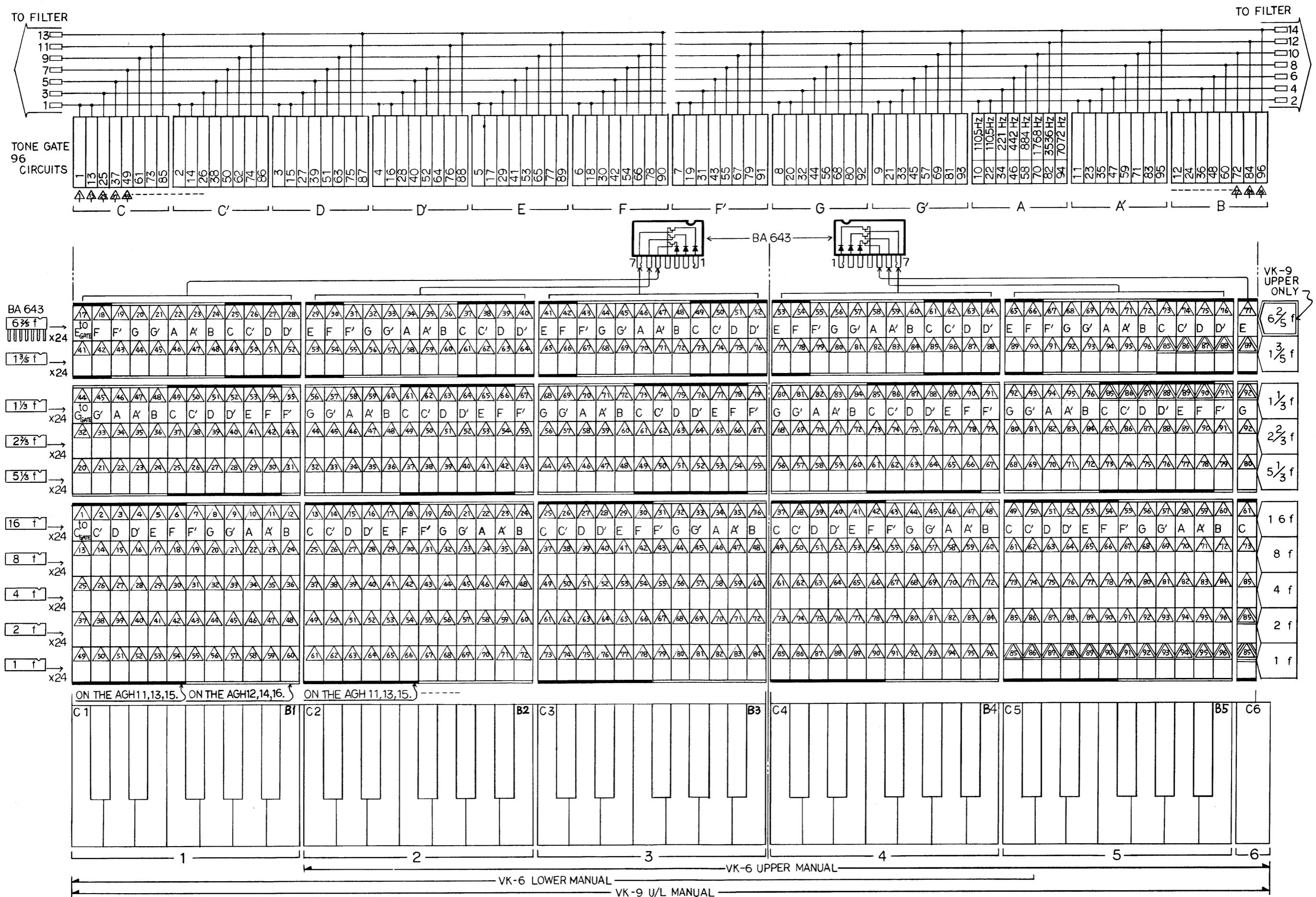
LOWER KEYBOARD KEYING IC, TONE GATE, DIVIDER

AGH-11 (144H011)

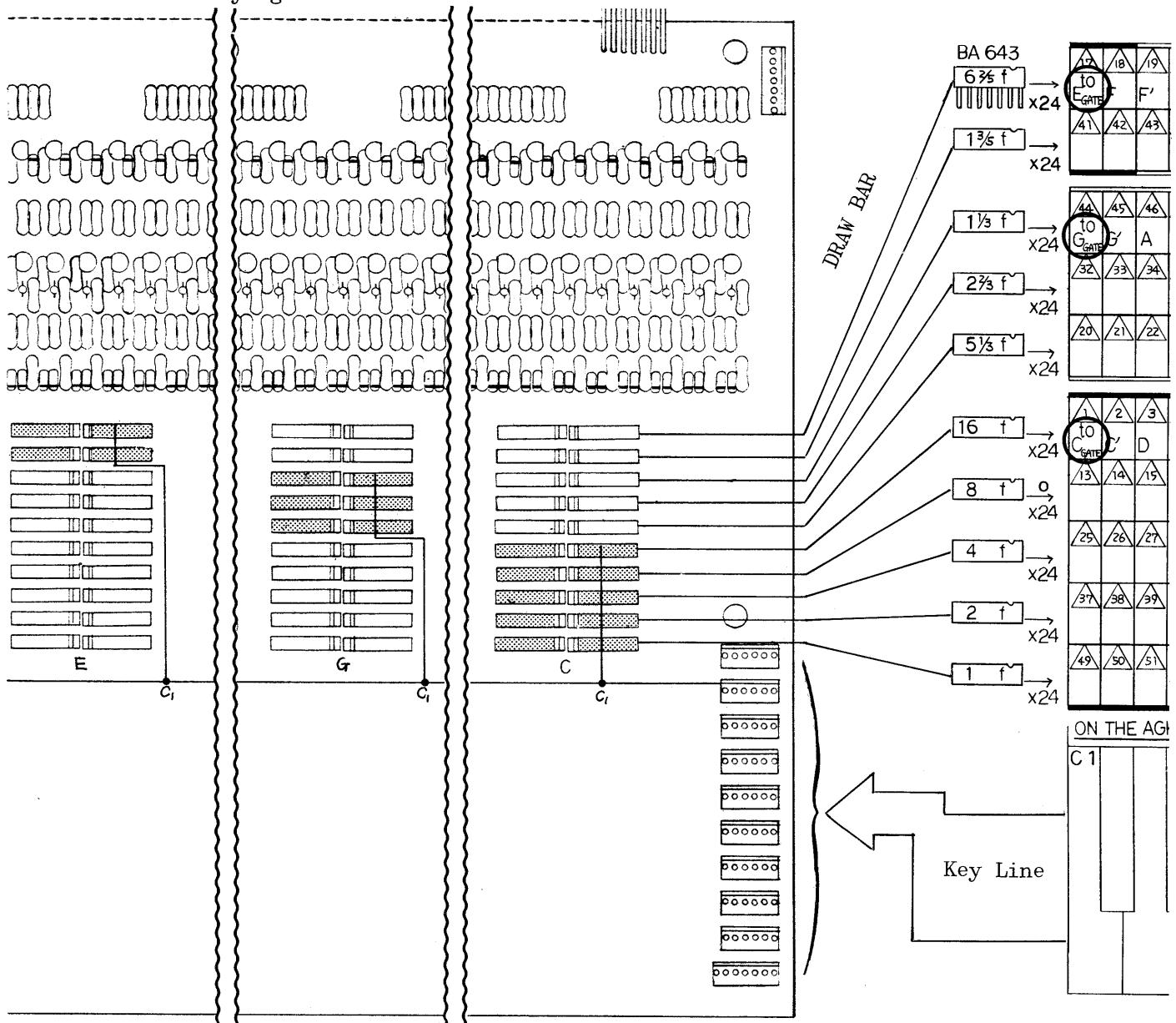


AGH-12 (144H012)





How to Locate Keying IC



EXAMPLE: Locating Keyer IC of C Keys

As indicated by "to G Gate" below C1 column (44), the keyer IC's for 5-1/3f, 2-2/3f and 1-1/3f are located in the G group. Thus, the keying circuit for 5-1/3 for C1 key is found in the sixth IC from the bottom in the G group.

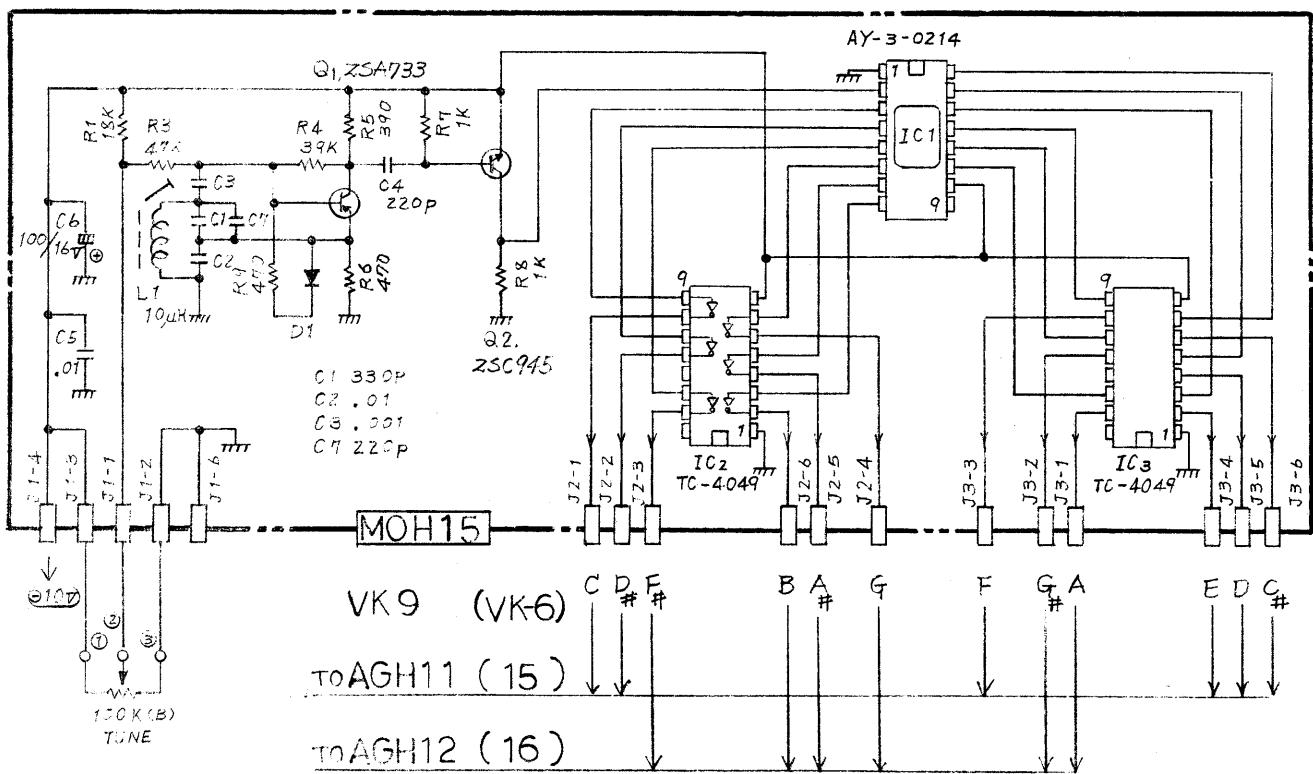
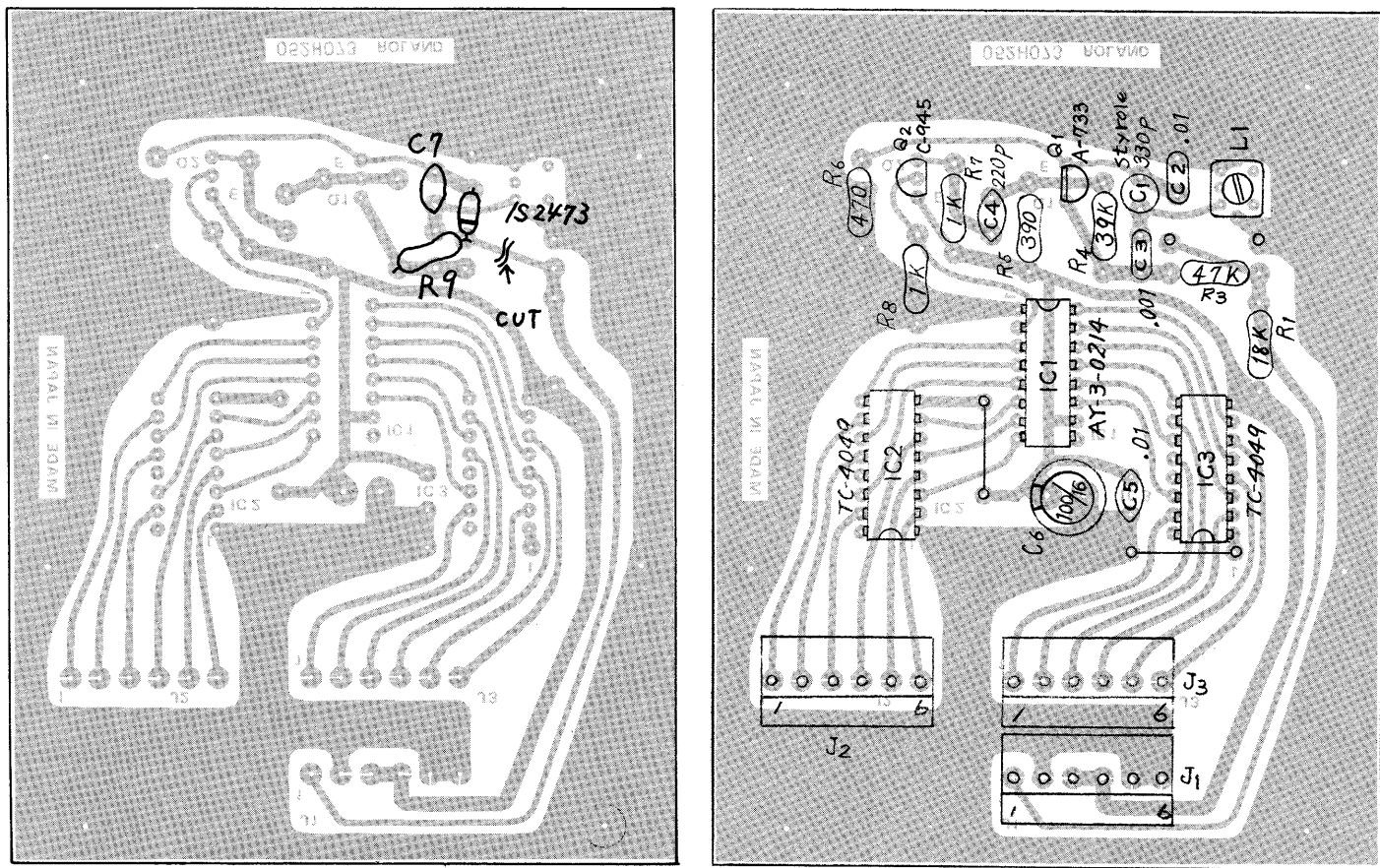
The keying IC for 6-2/5f of C1 is known to be located in the E group by indication of "to E Gate." The base of the keyer in question is the pin of BA643 at the uppermost position of the E group which is connected to the foil pattern extending from the C1 point.

HOW TO LOCATE KEYER IC

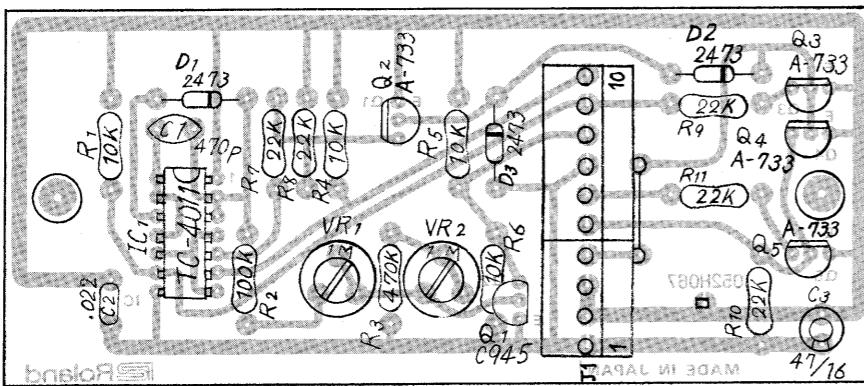
The legends (C, G, E) in the above figure indicate that the IC's (BA643) located thereon give drawbar voltages of each foot in the table on the right to Tone Gate of the same legend.

Note, however, that all IC's in the C group are not related with C keys. Only the IC's in the C group marked with screen are related with C keys. Other IC's in the group are activated by F and G' keys.

MASTER OSCILLATOR MOH-15 (149H015)

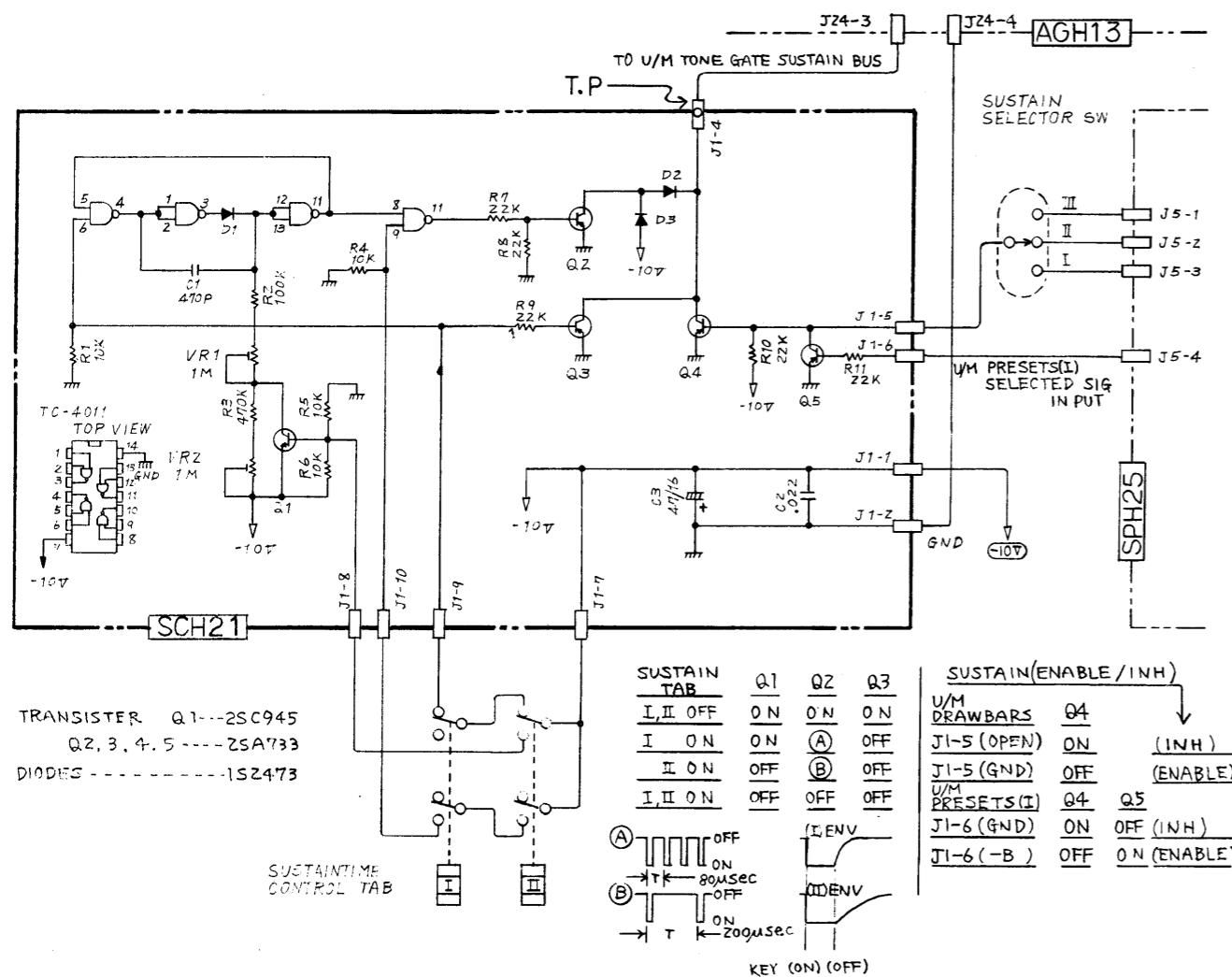


SUSTAIN CONTROL SCH-21 (149H021)

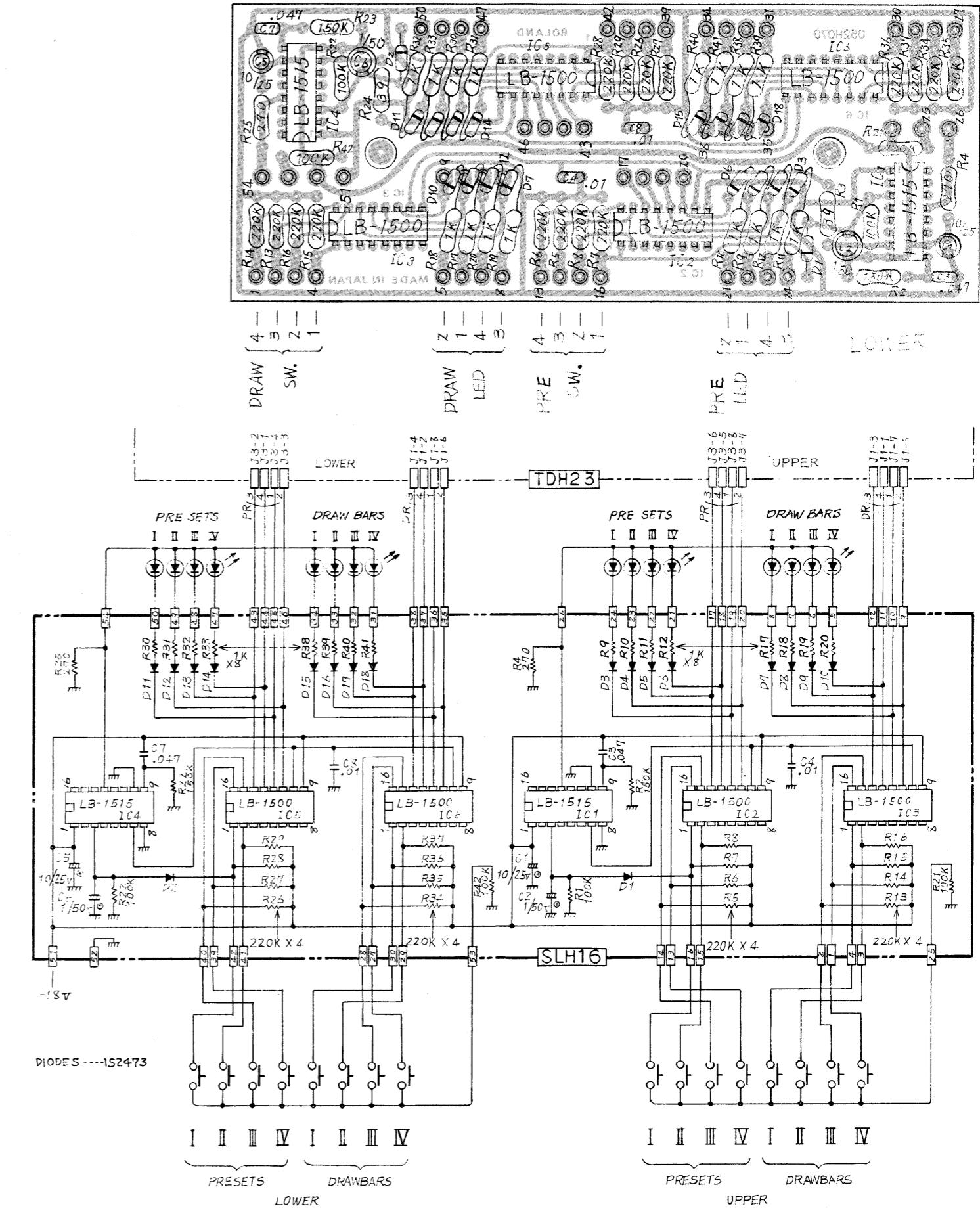


SELECTOR

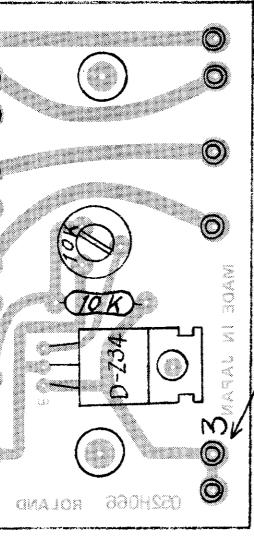
SLH-16 (149H016)



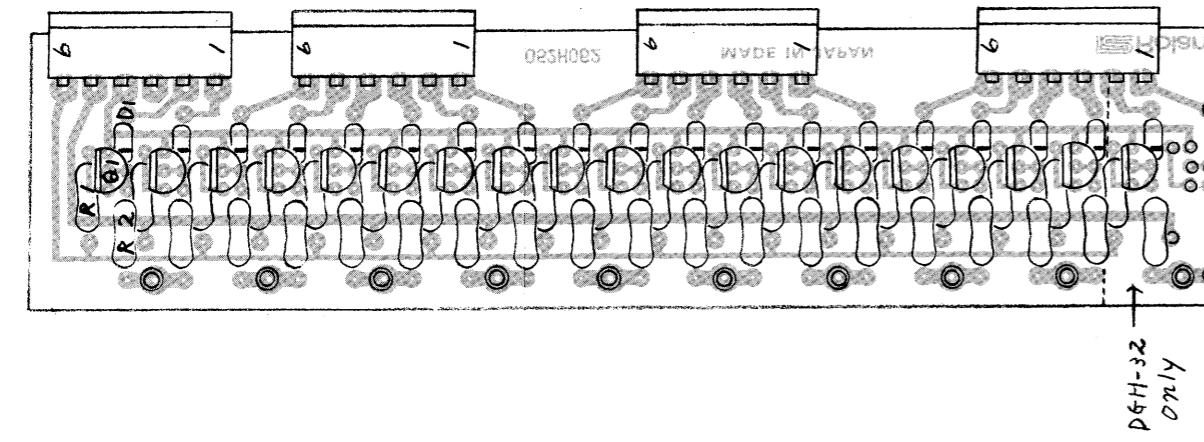
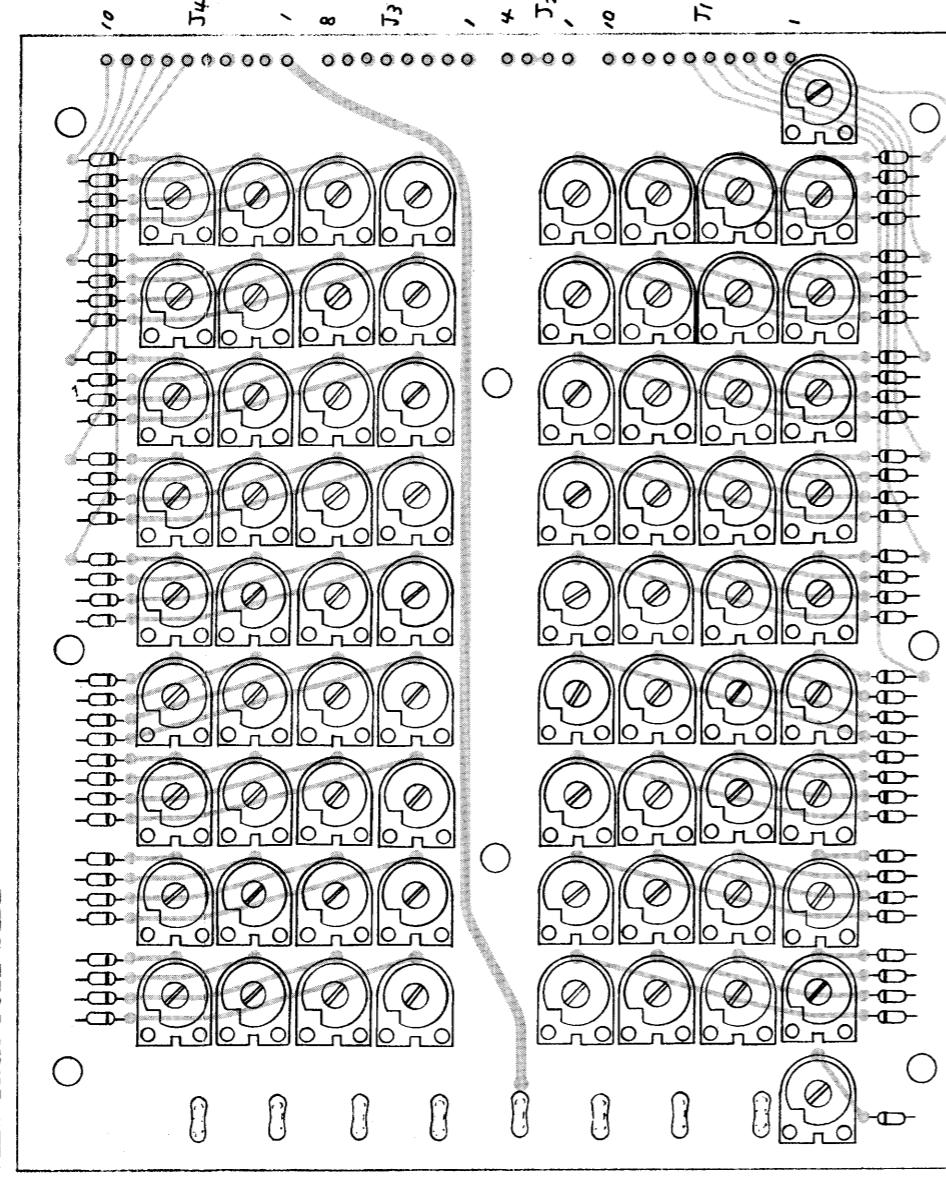
SLH-16 (149H016) UPPER



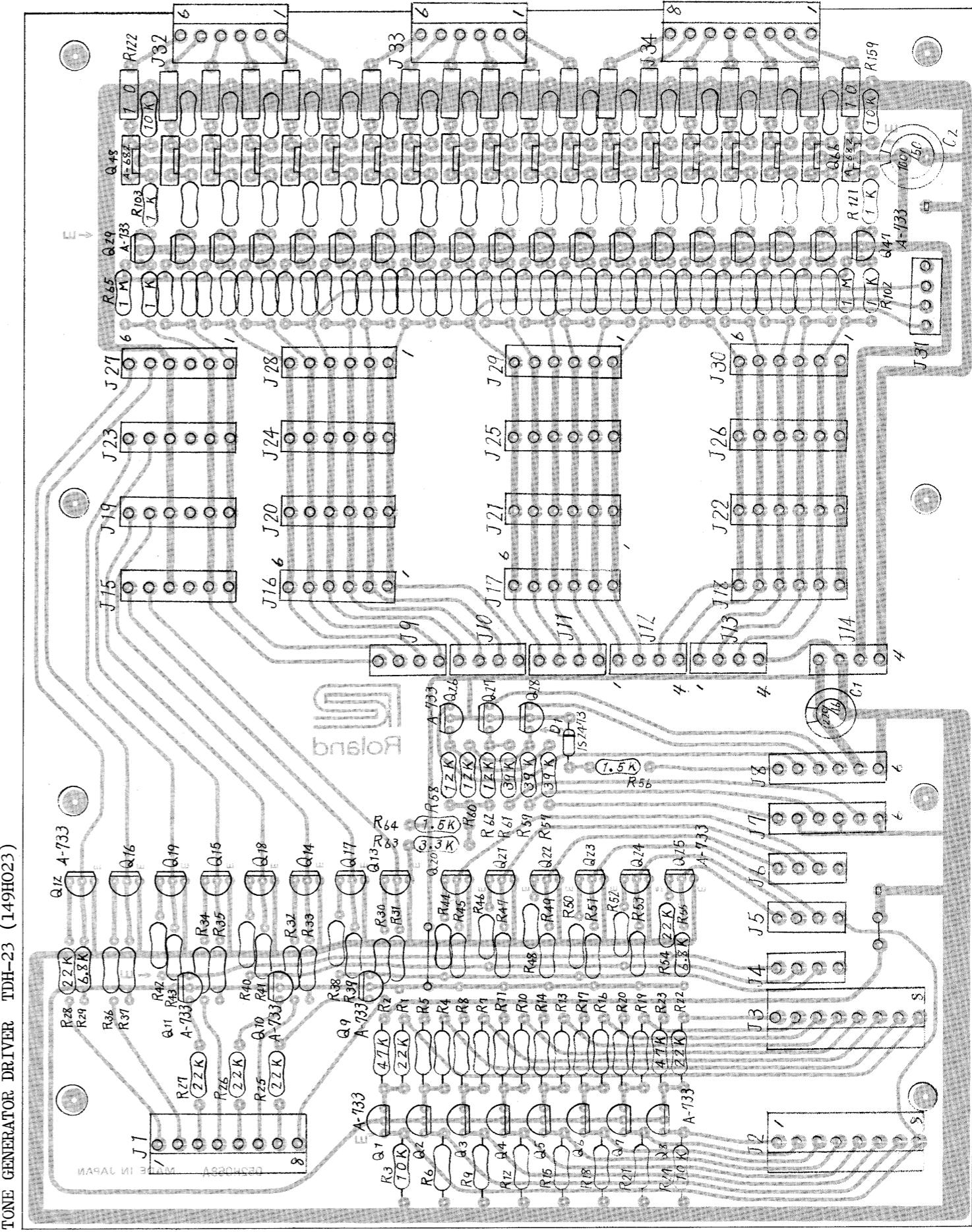
DRAWBAR GATE
DGH-31 (149H031)
DGH-32 (149H032)



PRH-22 (149H022)
VIEW FROM FOIL SIDE



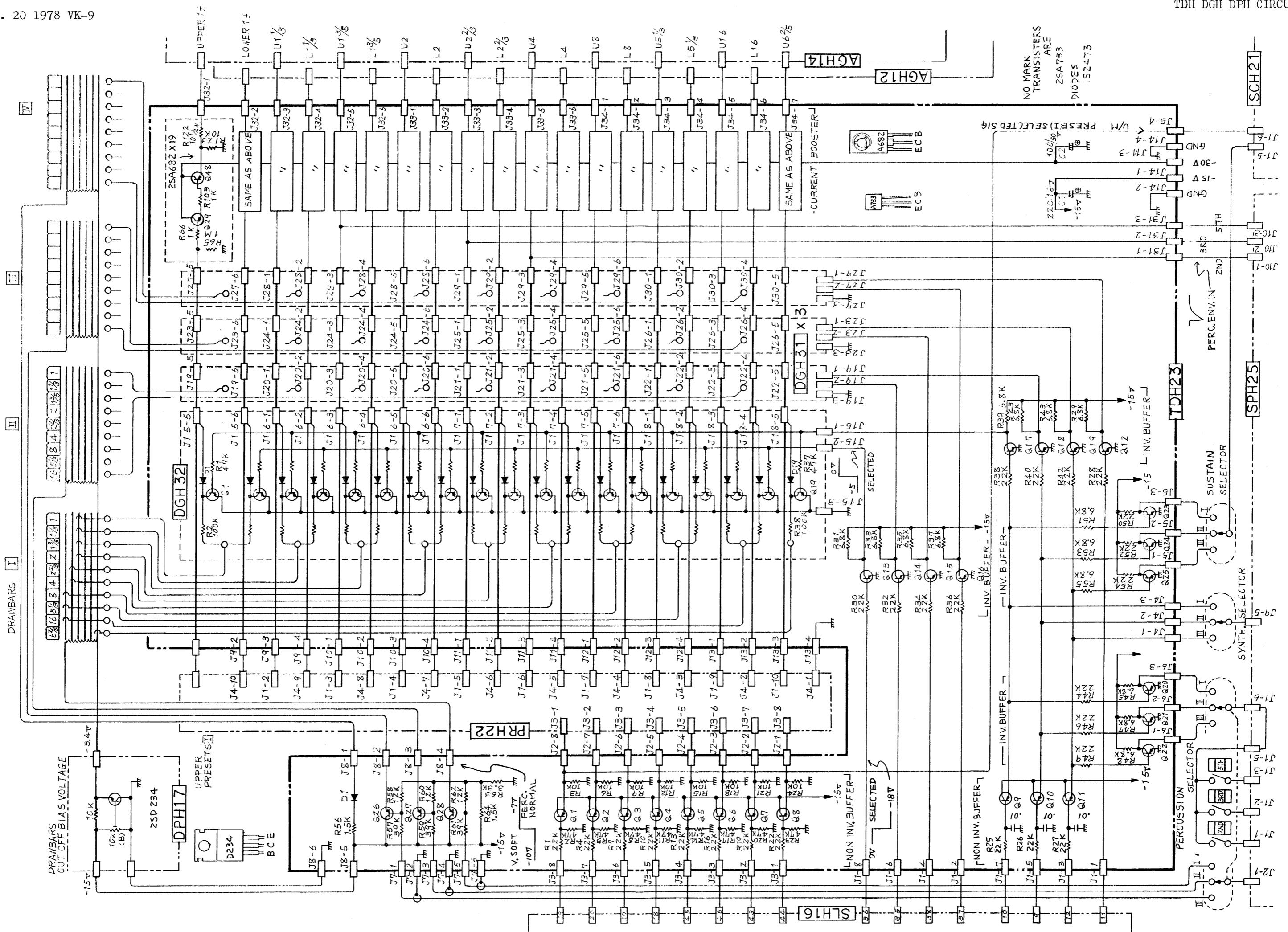
TONE GENERATOR DRIVER TDH-23 (149H023)



DRAWBAR POWER SUPPLY
DPH-17 (149H017)

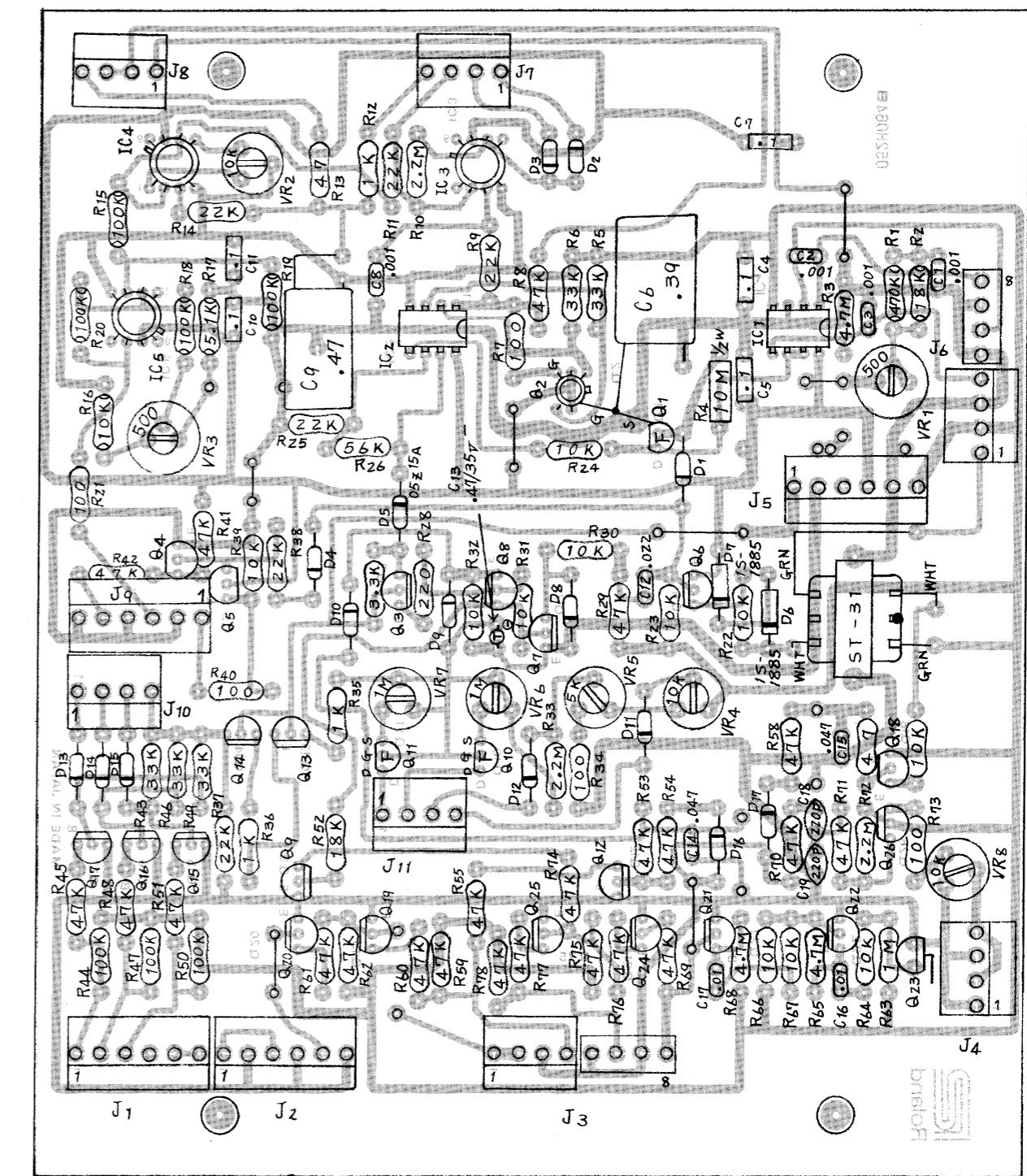
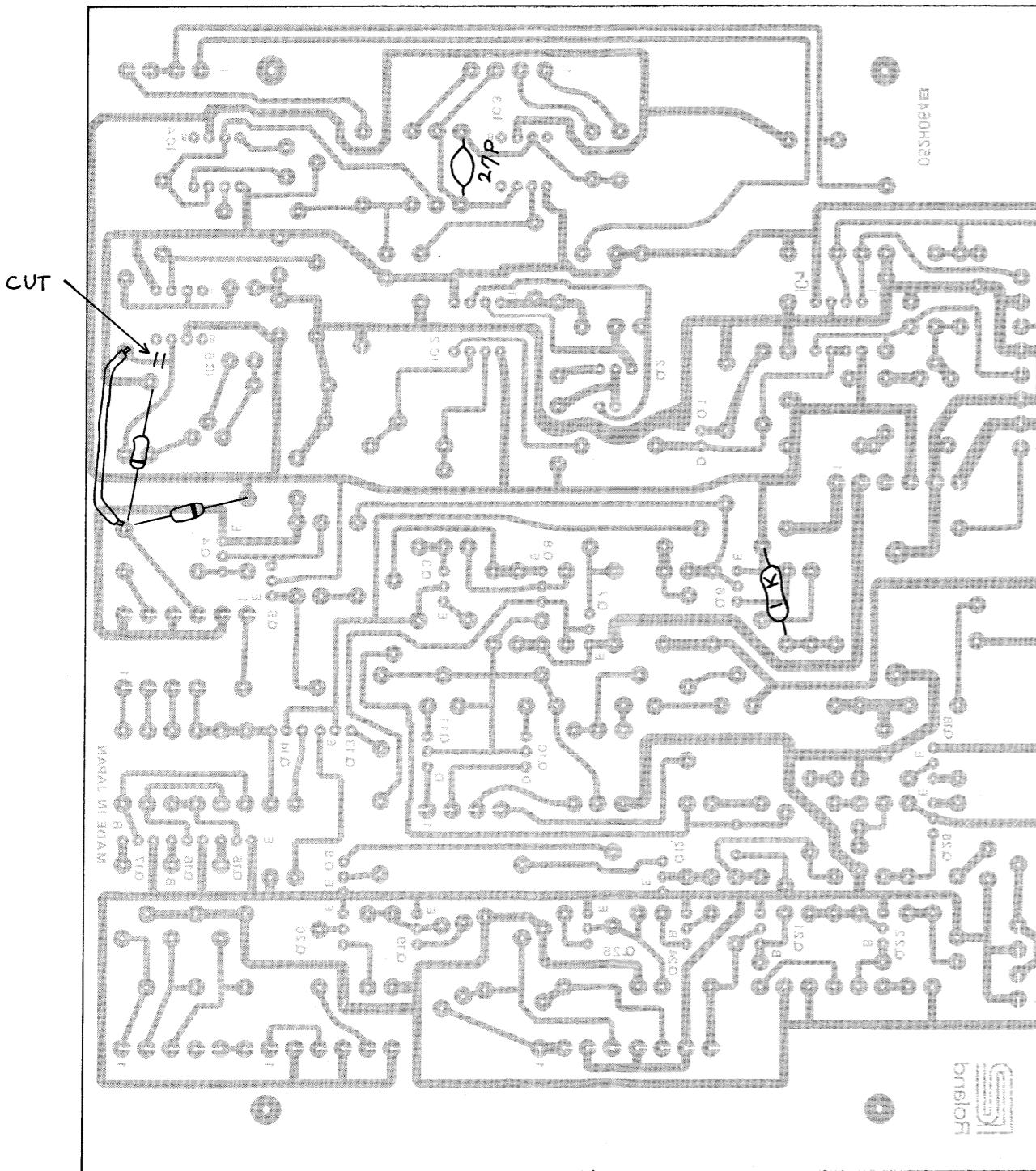
GND

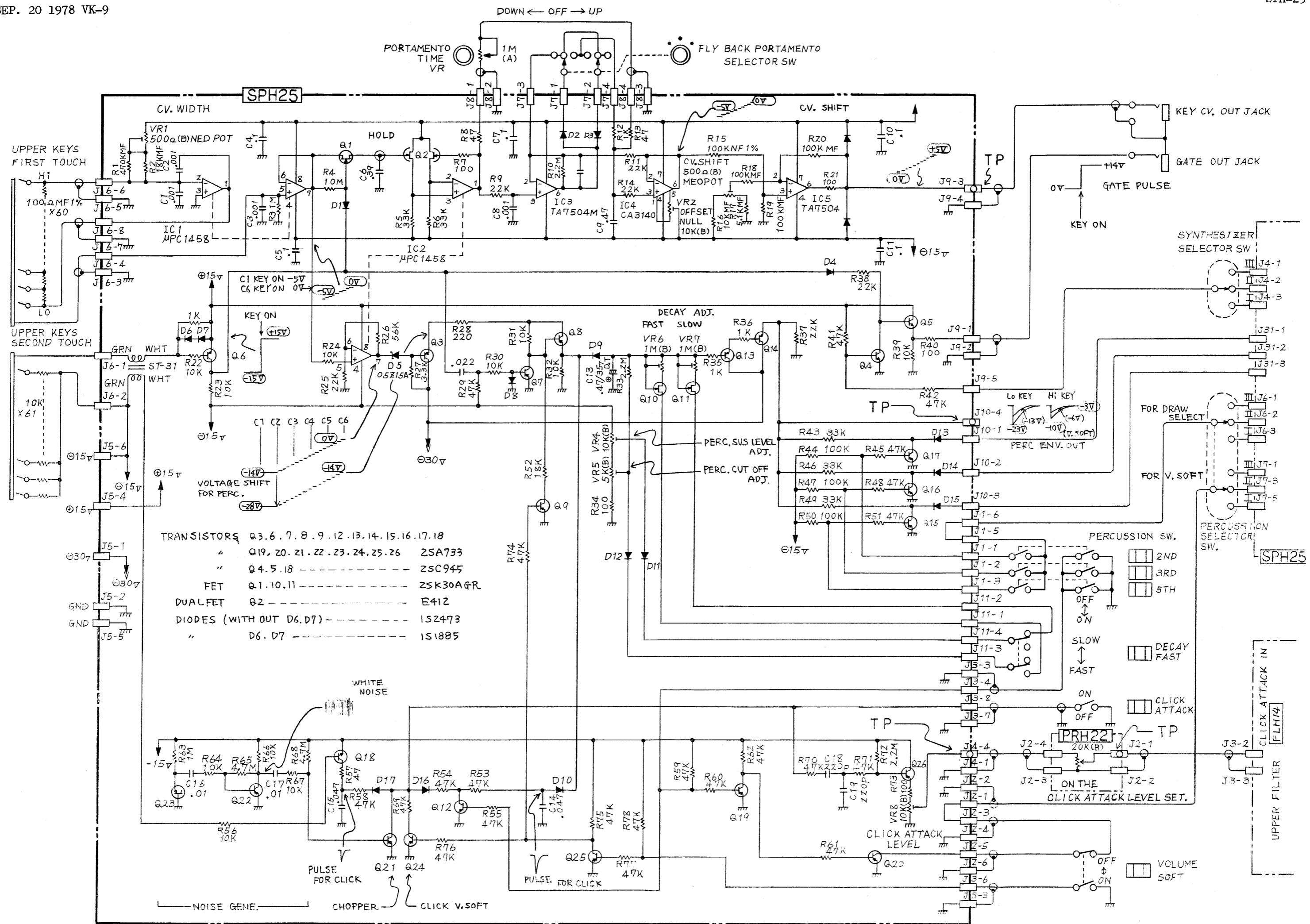
DRAWBAR GATE
DGH-31 (149H031)
DGH-32 (149H032)



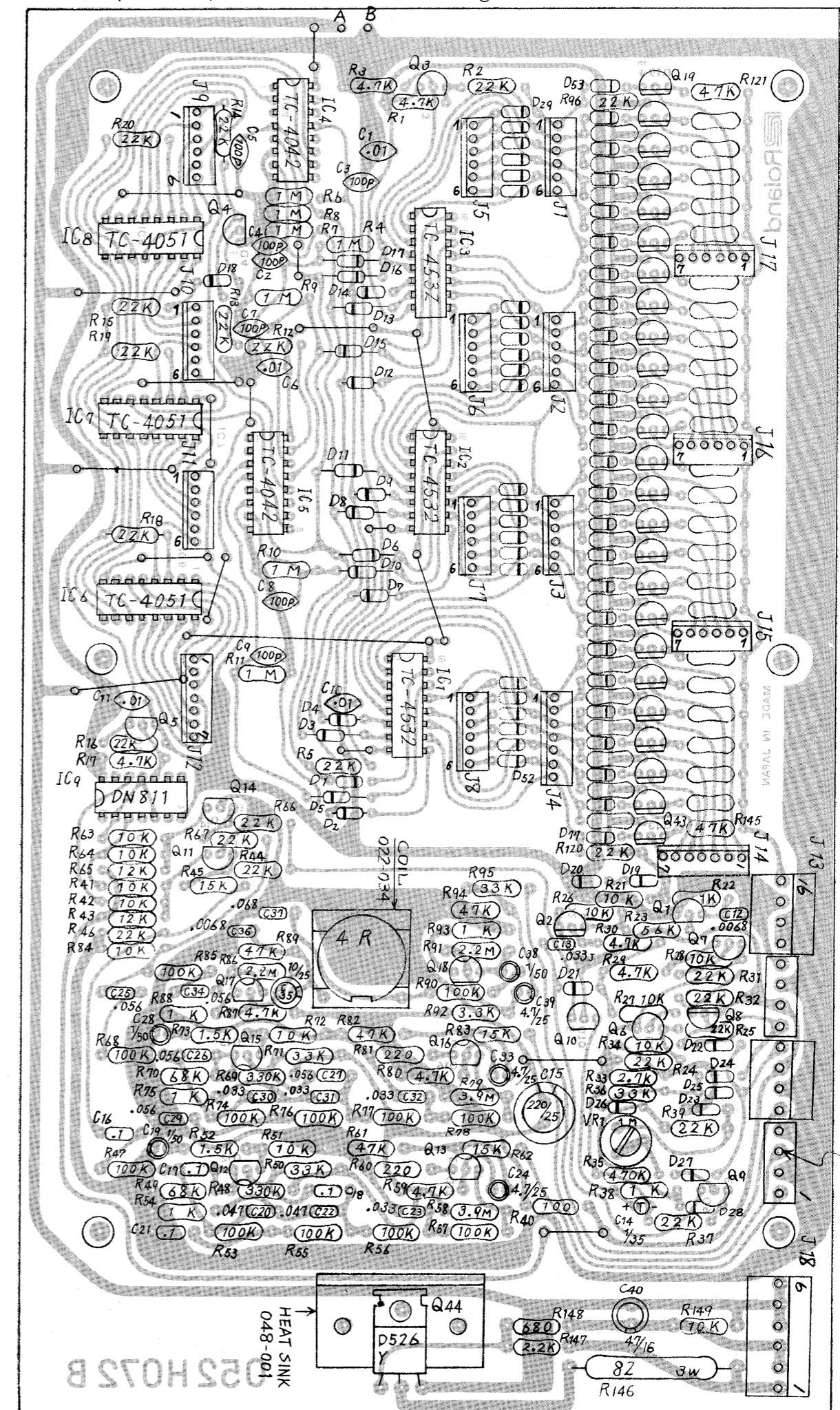
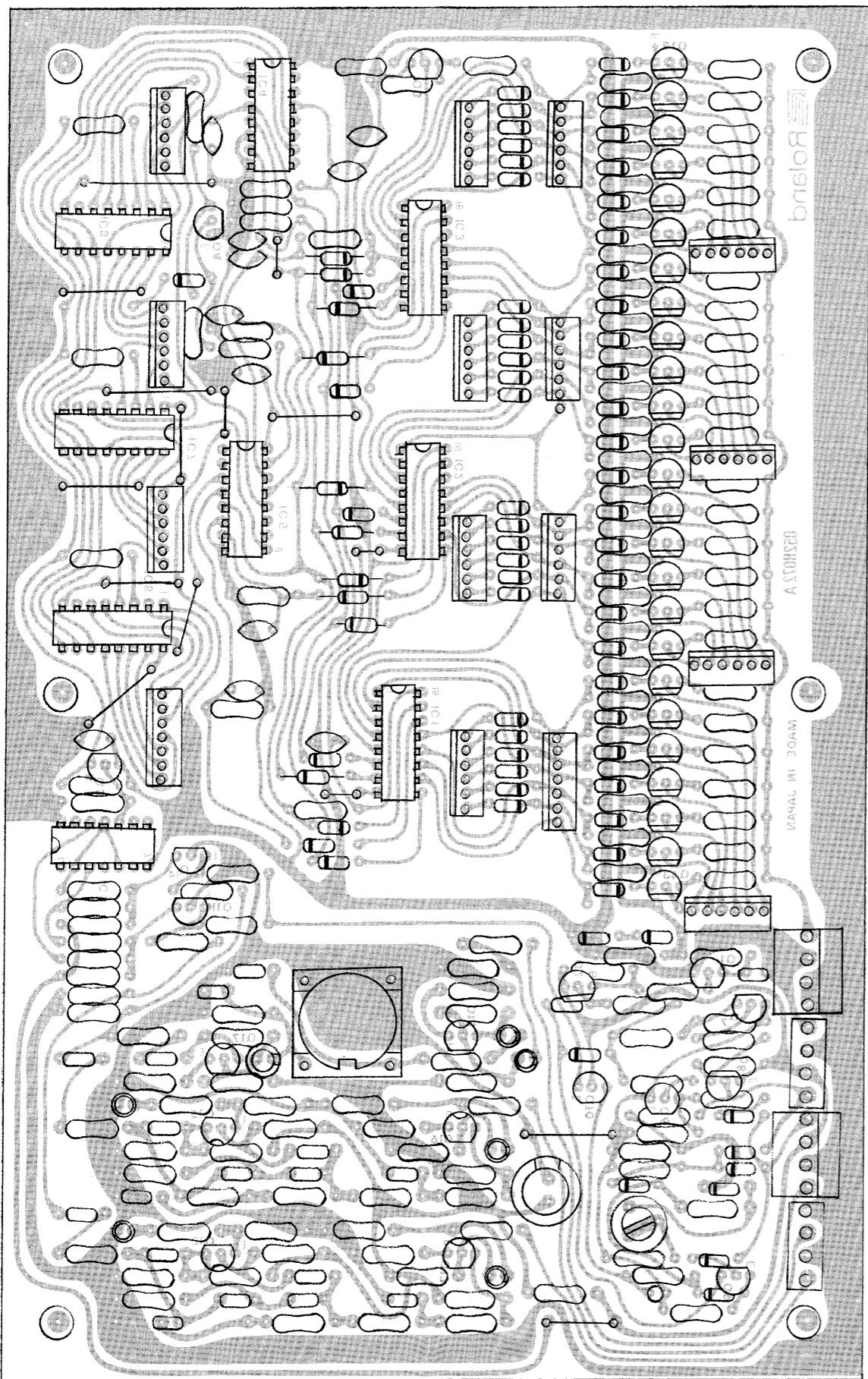
SYNTHESIZER PERCUSSION CONTROL SPH-25 (149H025)

PARTS ON THE FOIL SIDE

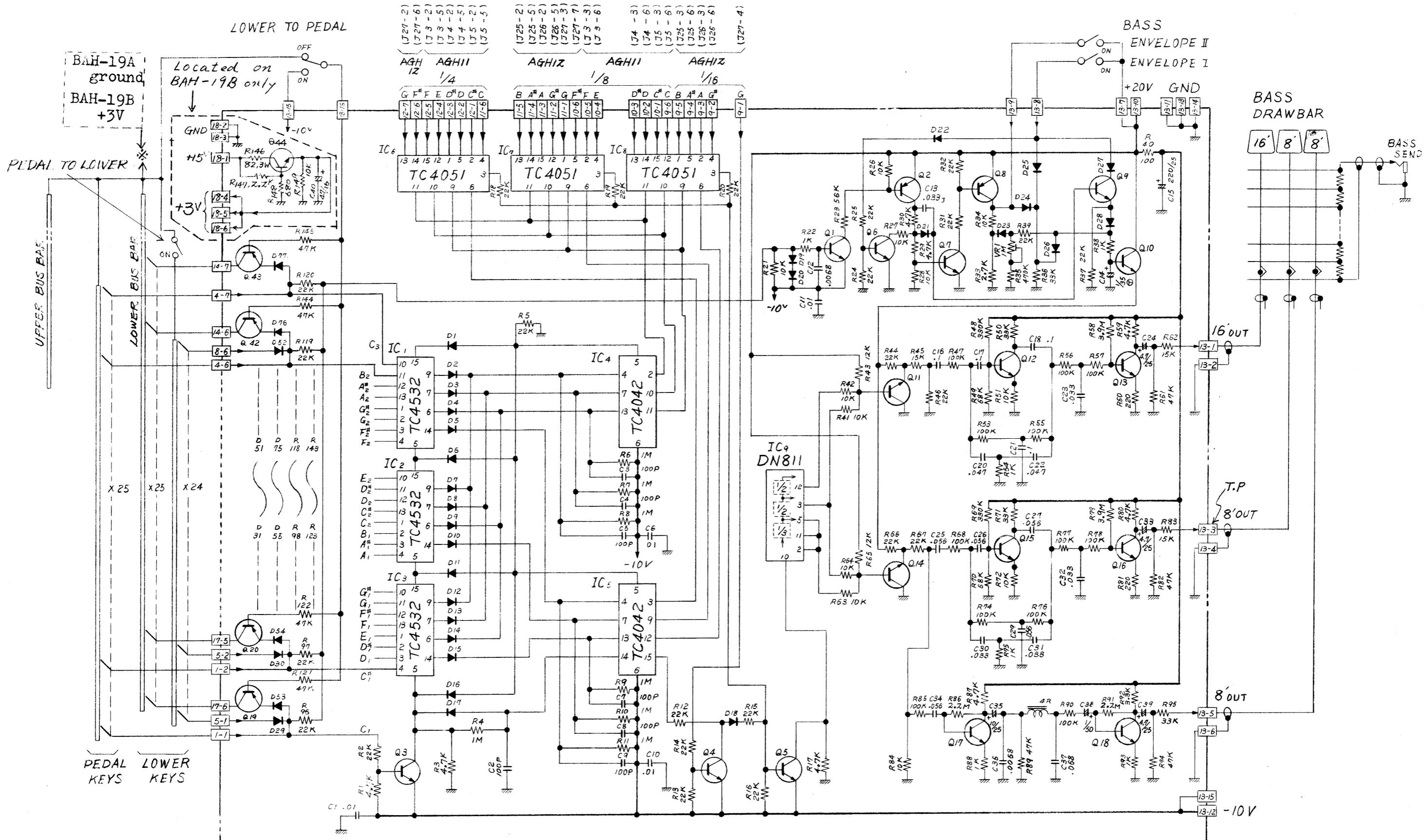




BASS BAH-19A (149H019A) Serial NO. up to 660131



SEP. 20 1978 VK-9



Transistor : 2SA-733 Q2 8.19~43
 2SC-945 Q1.3.4.5.6.7.9.10.11.14
 2SC-1222 Q12.13.15.16.17.18
 ZSD-526 Q44

PRIORITY ENCODER

d4	1	16	+3V
d5	2	15	EOUT
d6	3	14	GS
d7	4	13	d3
Ein	5	12	d2
Q2	6	11	d1
Q1	7	10	d0
-10V	8	9	Q0

QUAD D-LATCH

Q4	1	16	+3V
Q1	2	15	Q4
Q3	3	14	d4
d1	4	13	d3
CLOCK	5	12	d2
POLARITY	6	11	d1
d2	7	10	d0
-10V	8	9	Q0

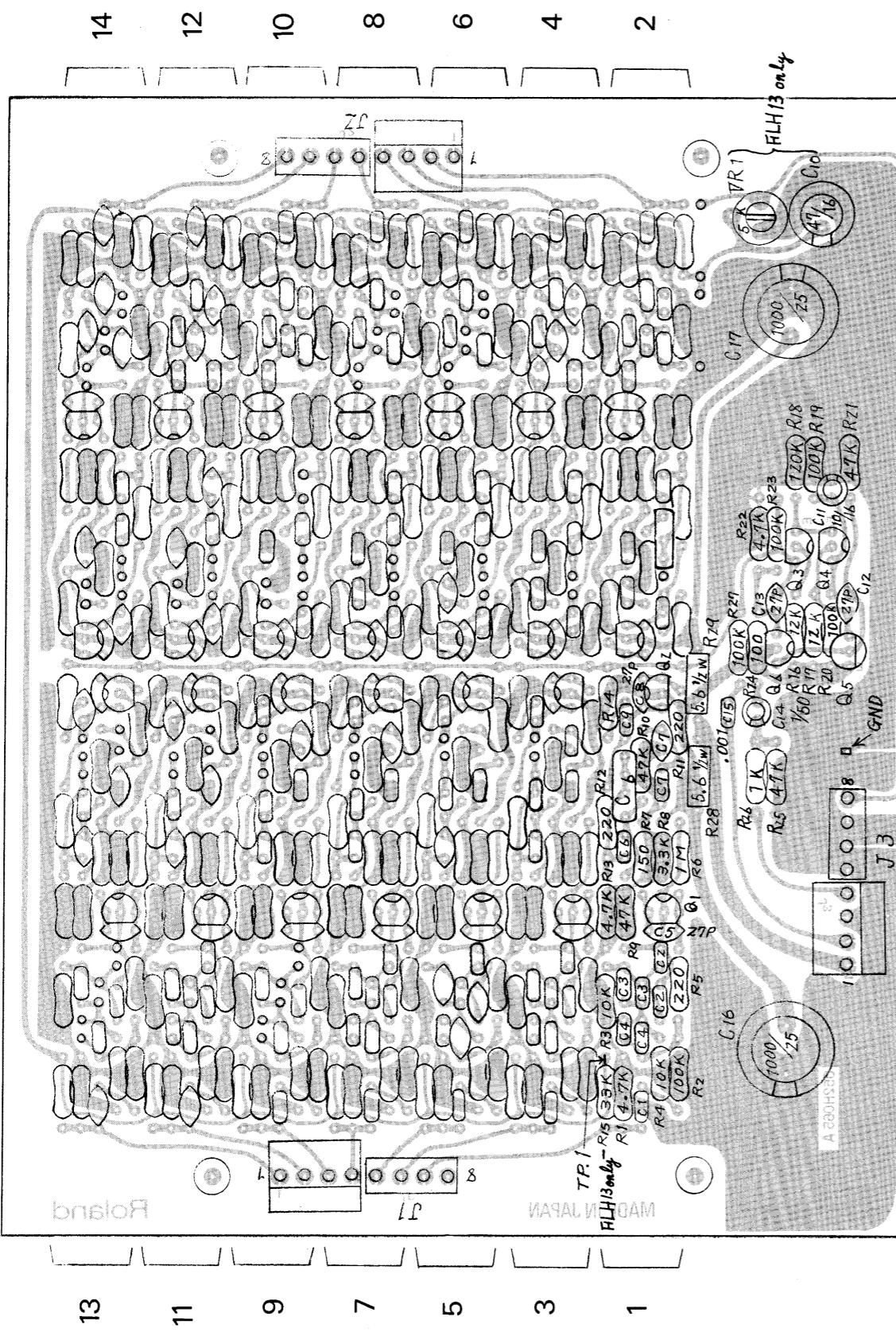
MULTIPLEXER

CH4	1	16	+3V
CH6	2	15	CH2
CH5	3	14	CH1
CH7	4	13	CH0
CH5	5	12	CH3
INHIBIT	6	11	CONTROL A
VEE(NC)	7	10	"
-10V	8	9	C

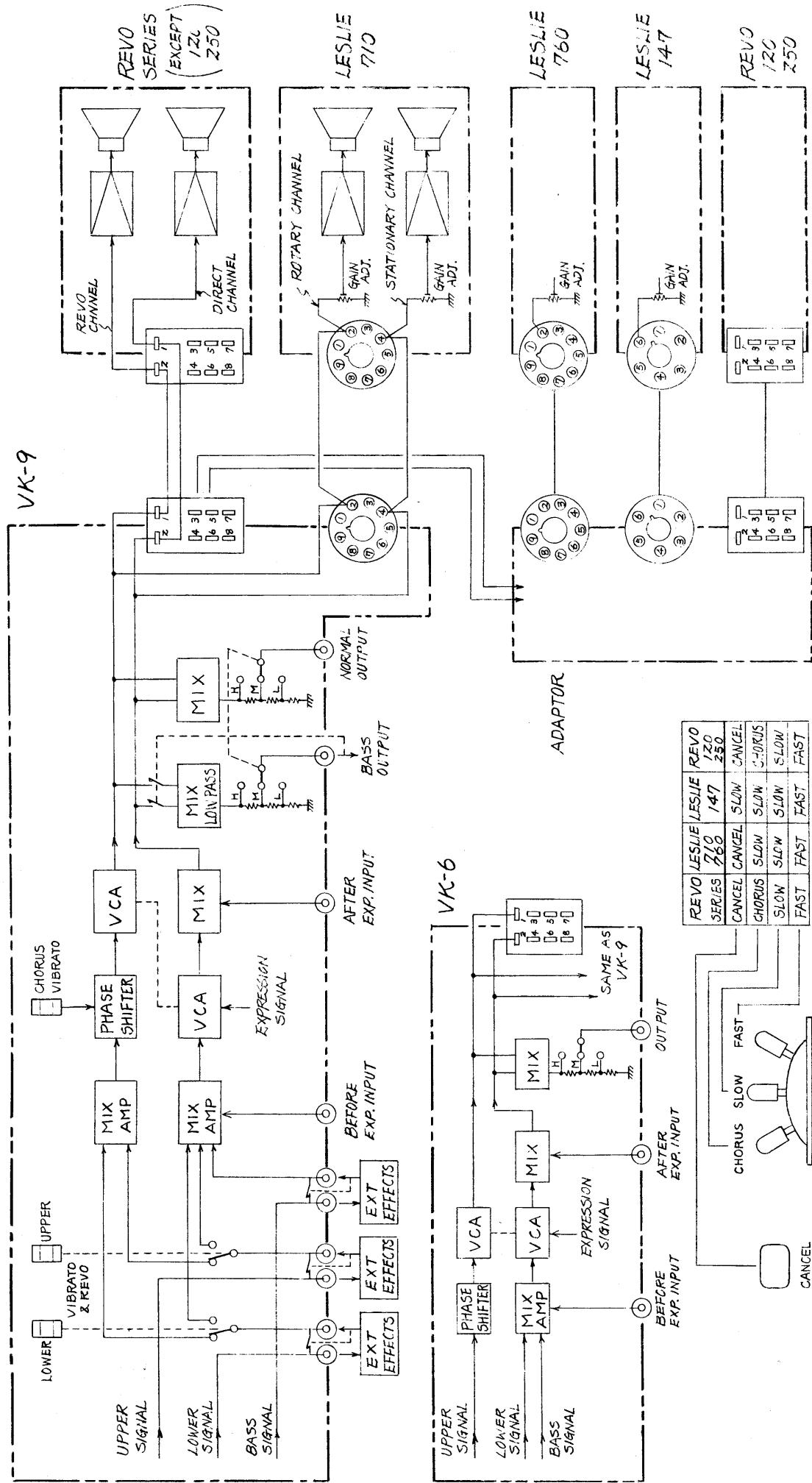
COUNTER

Q4	1	14	GND
Q2	2	13	QD
Q4	3	12	QD
Q4	4	11	KA
Q4	5	10	TA
Q4	6	9	QA
Q4	7	8	QA

FILTER FLH-13 (145H013) FLH-14 (145H014)

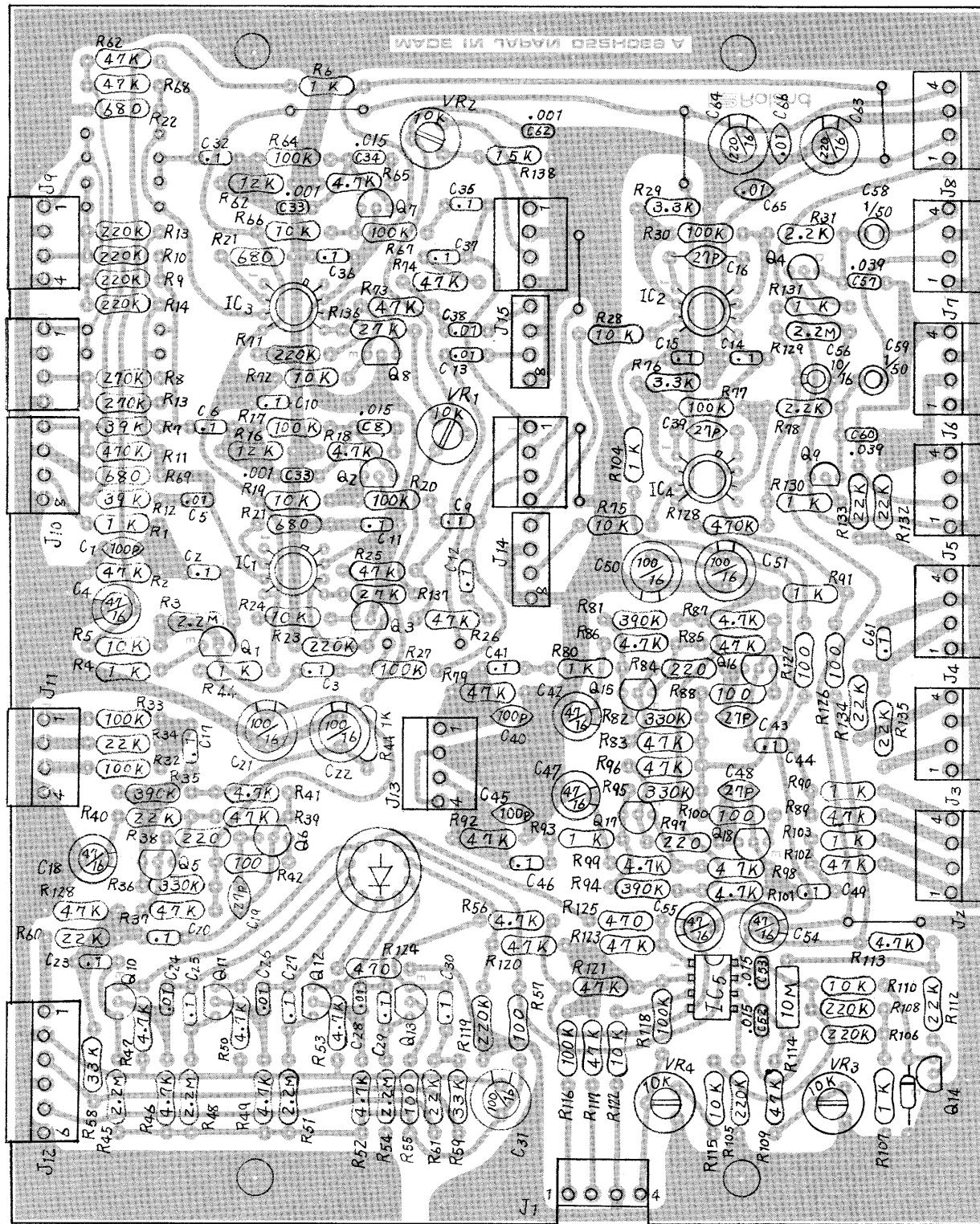


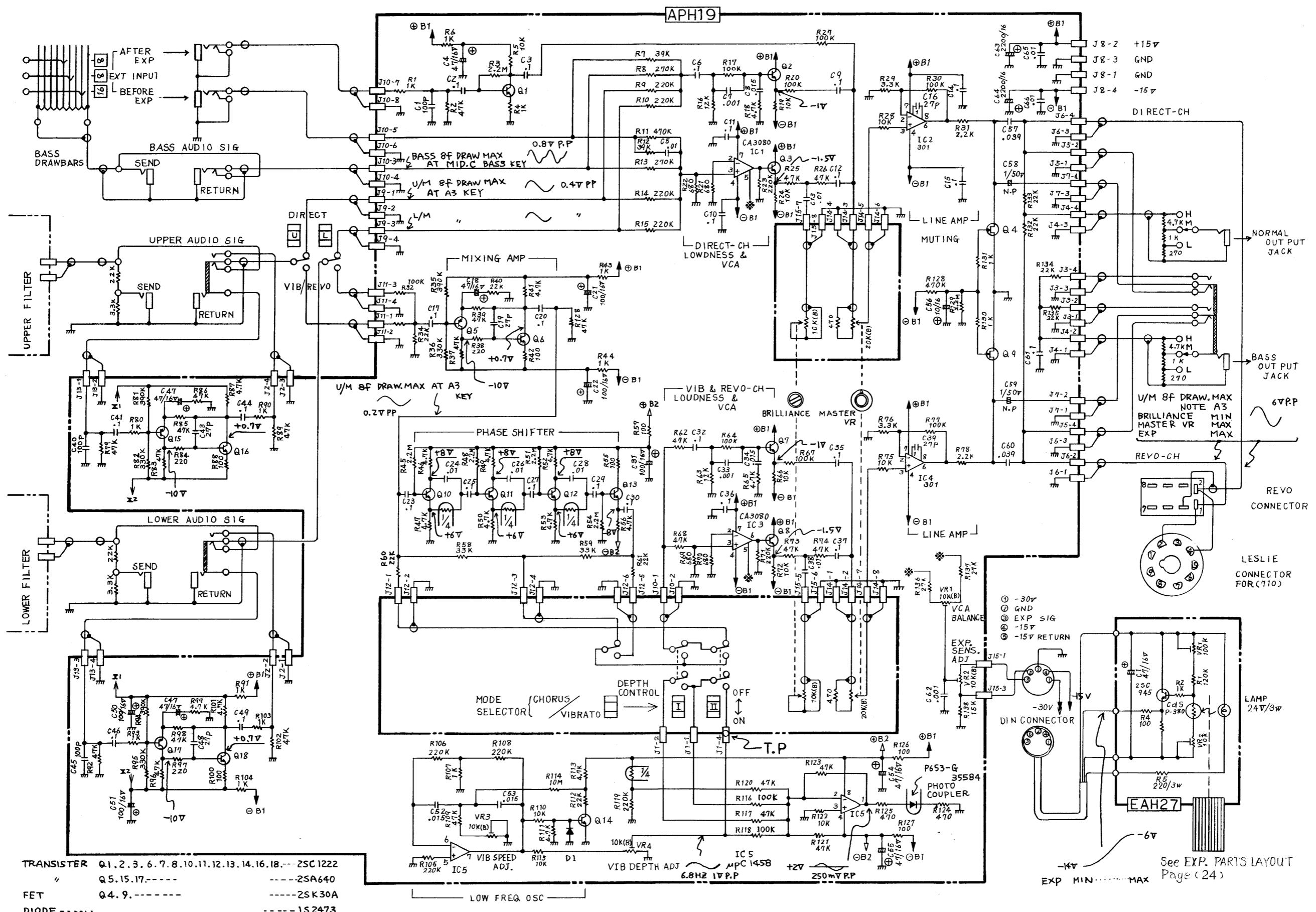
AUDIO SIGNAL FLOW CHART



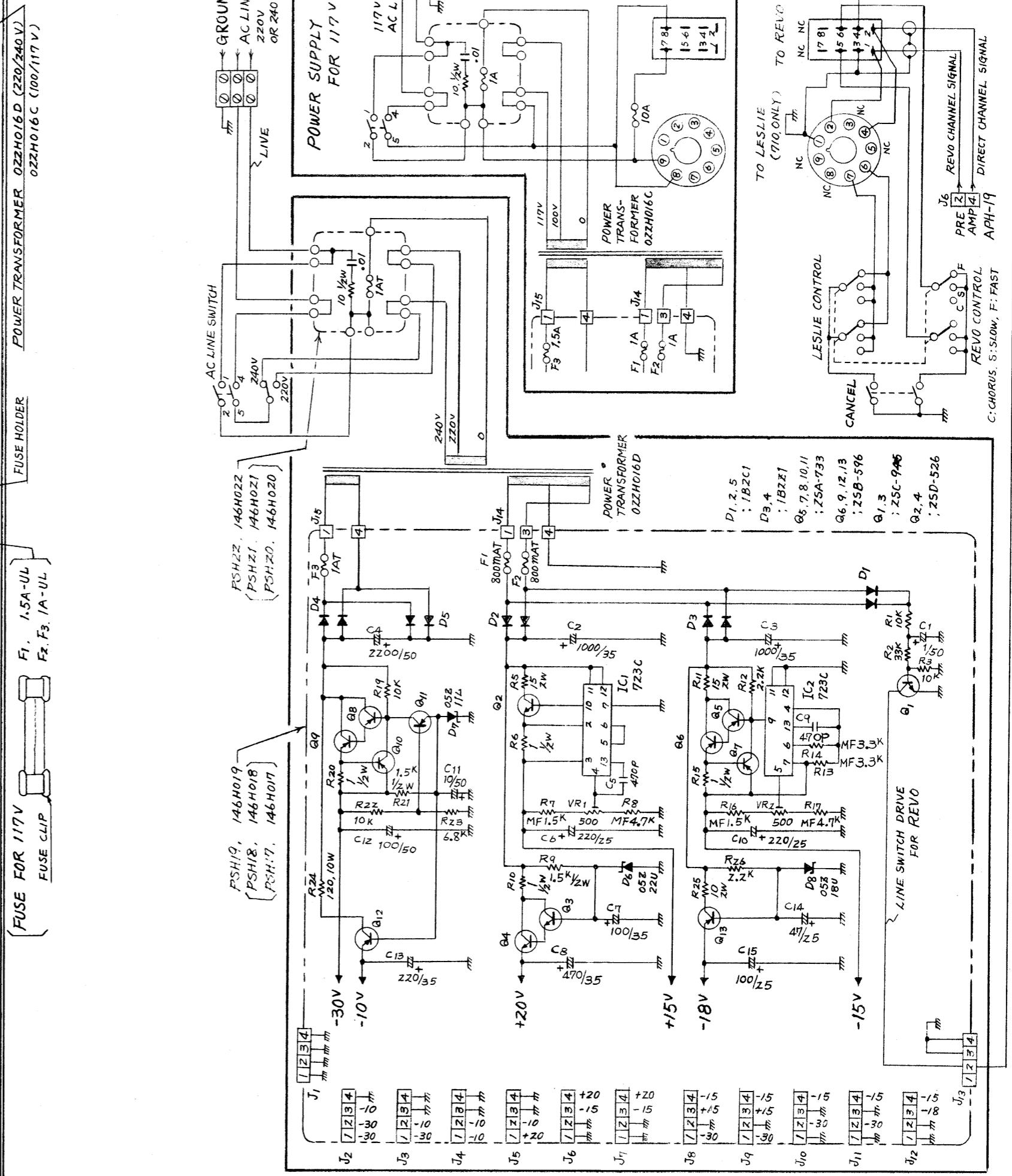
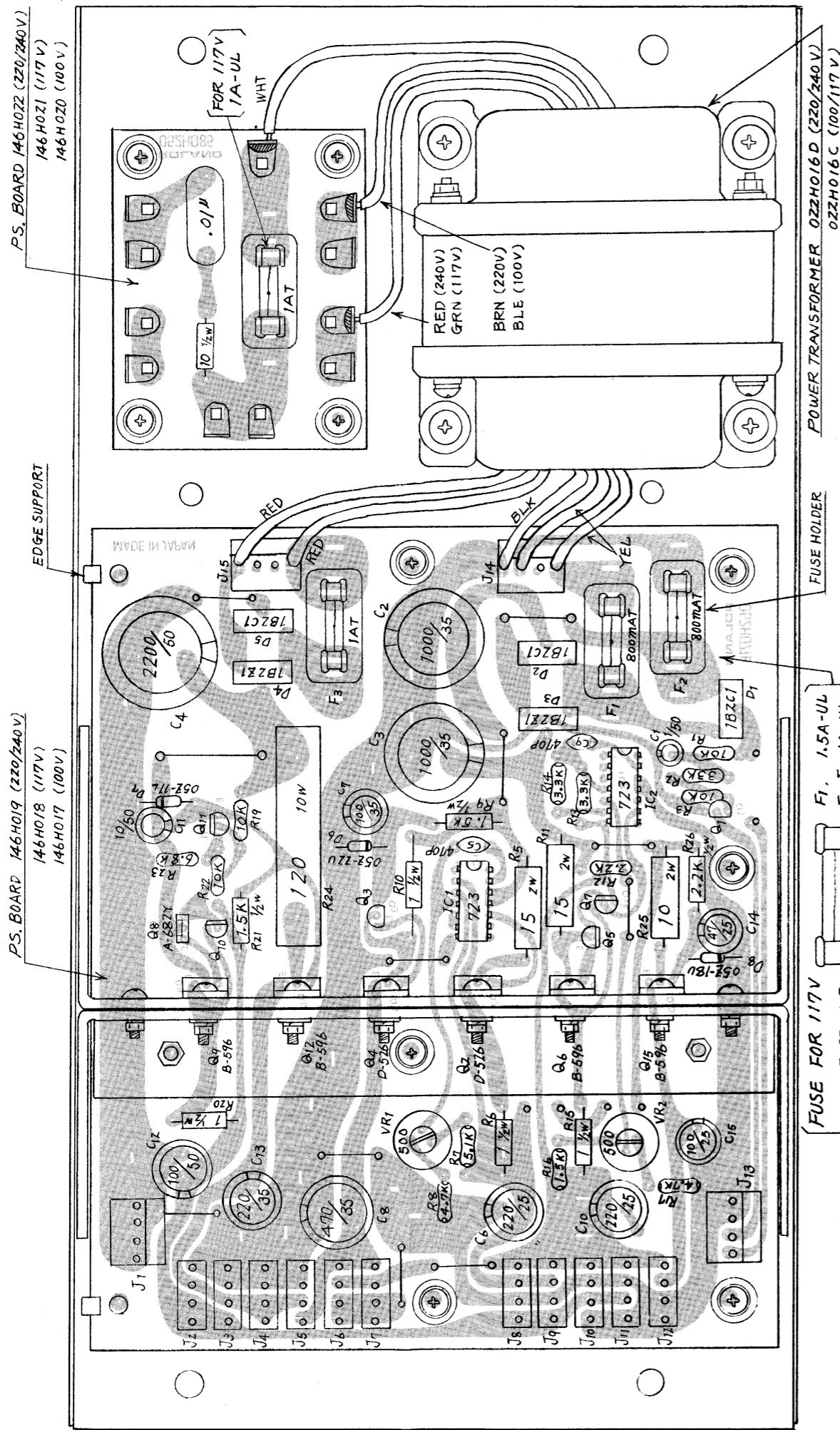
If the volume is insufficient when using Leslie speaker system,
adjust GAIN ADJ of the Leslie system.

PREAMPLIFIER APH-19 (141H019)



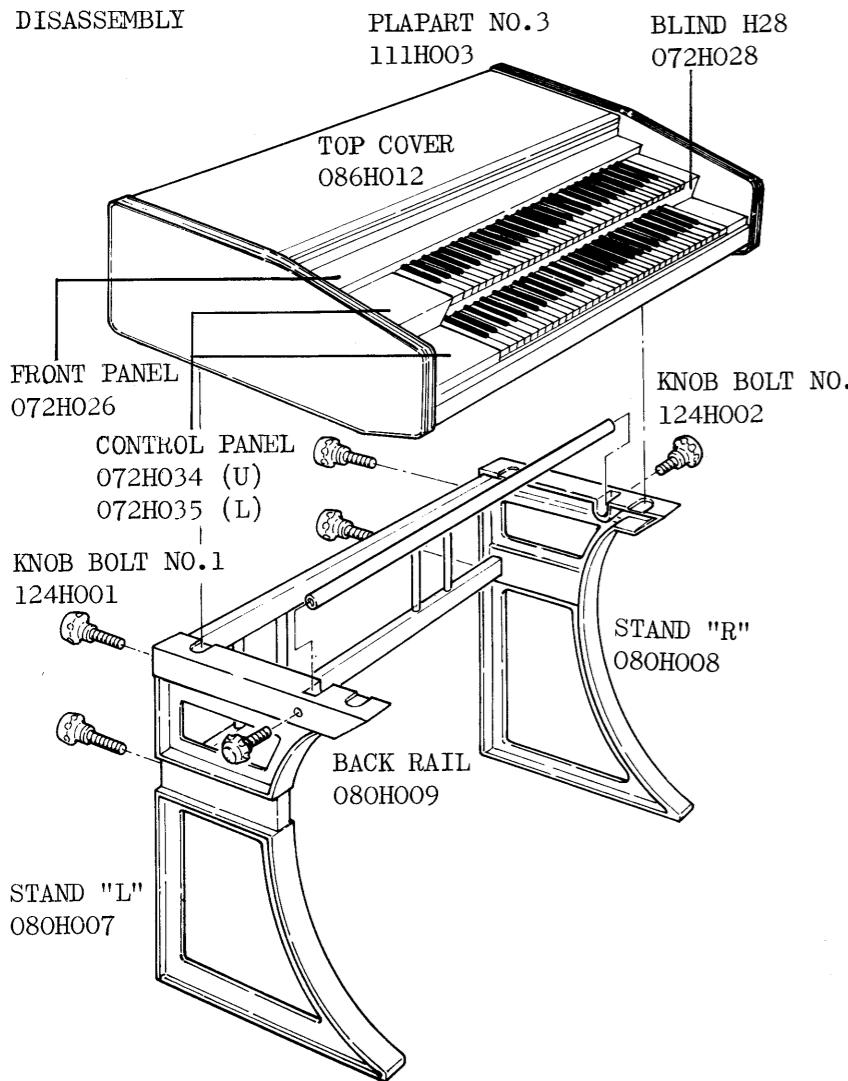


POWER SUPPLY

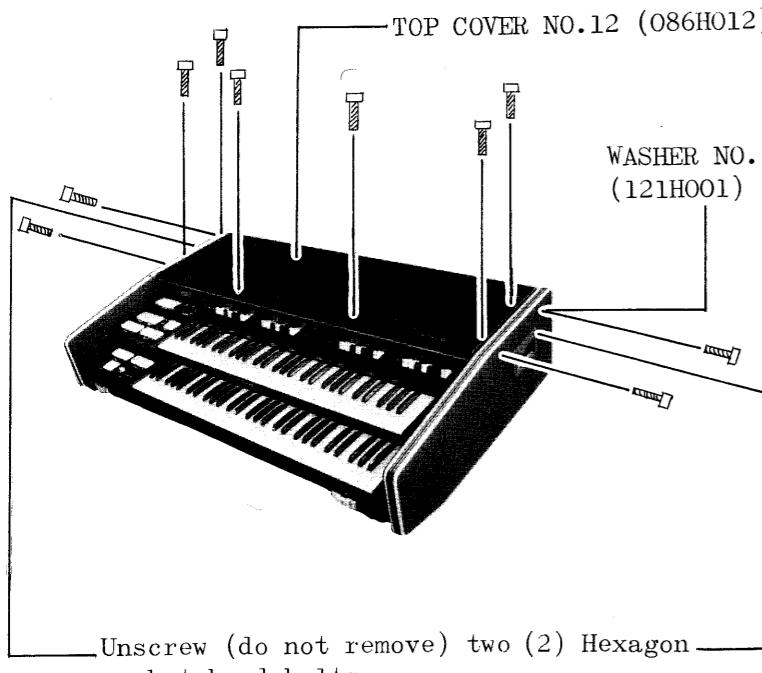


Note: For some 240V versions, AC is wired to Revo/Leslie socket.

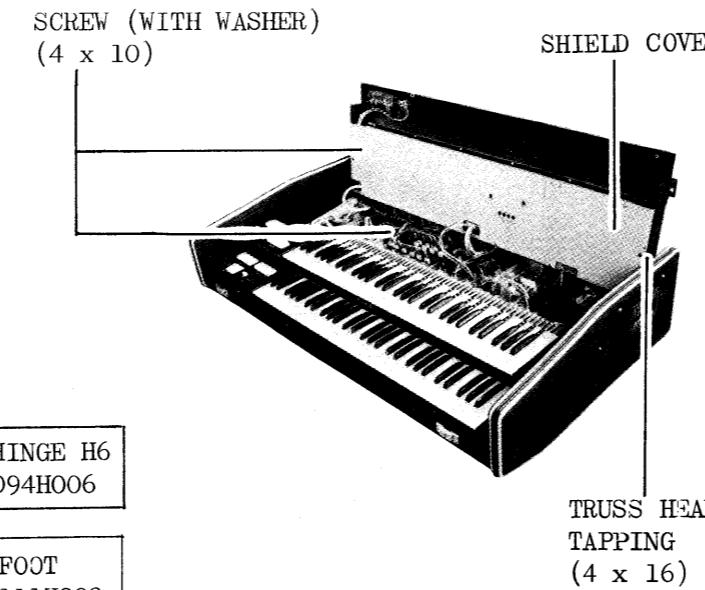
SEP. 20 1978 VK-9



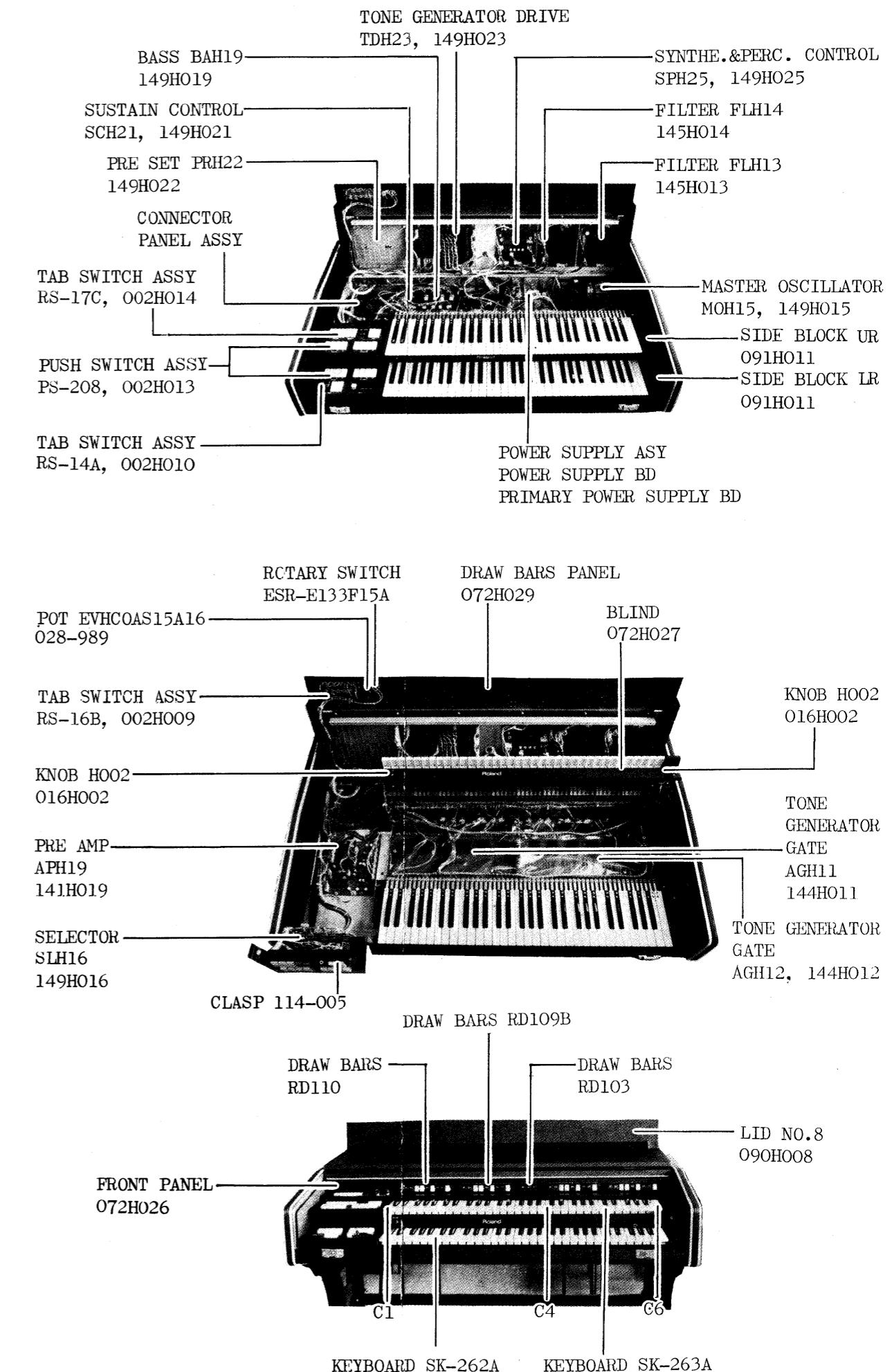
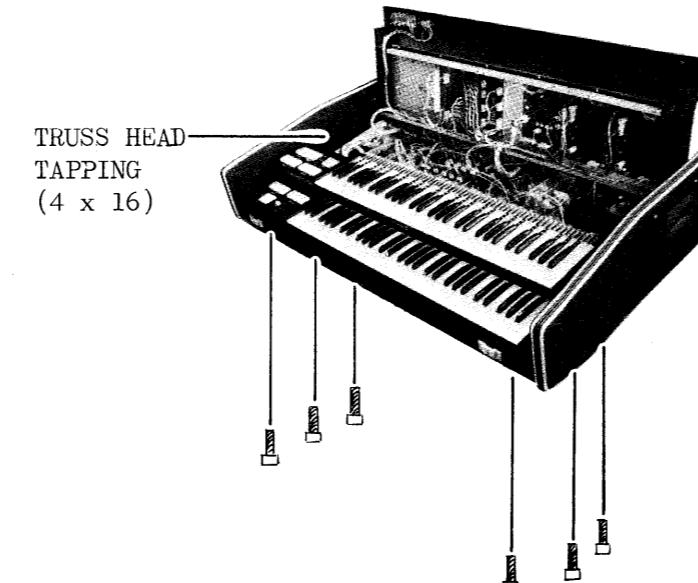
1. TO OPEN TOP COVER.
Remove ten (10) Hexagon socket head bolts.



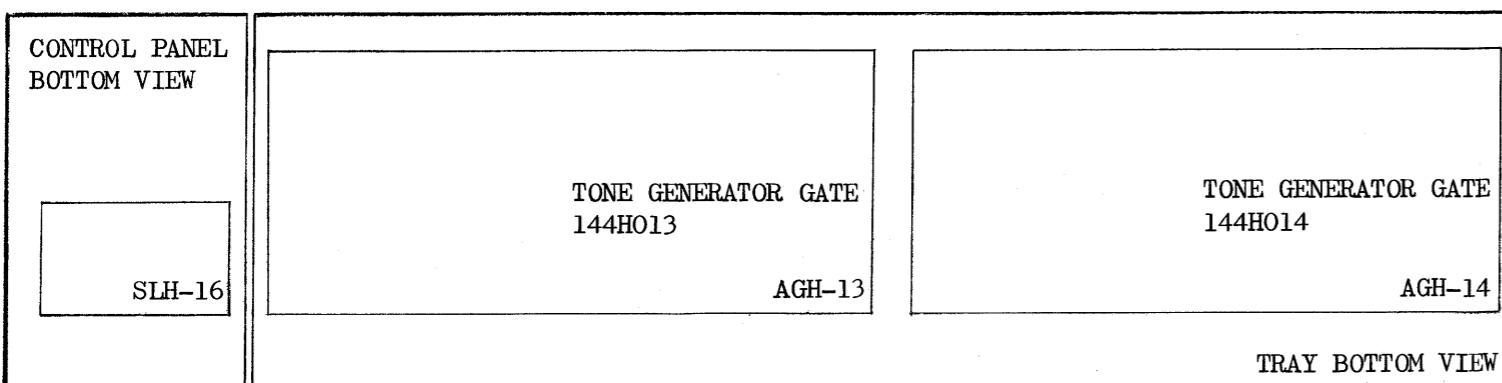
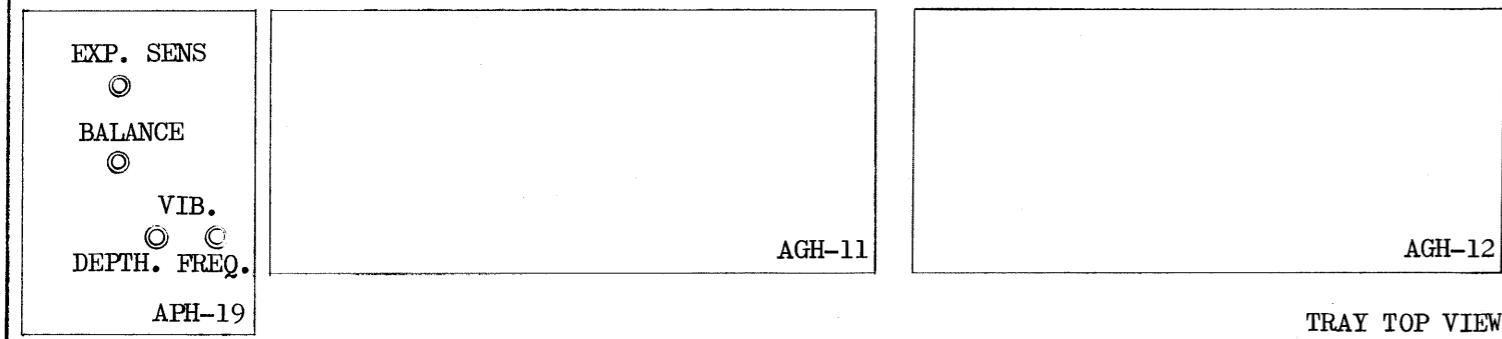
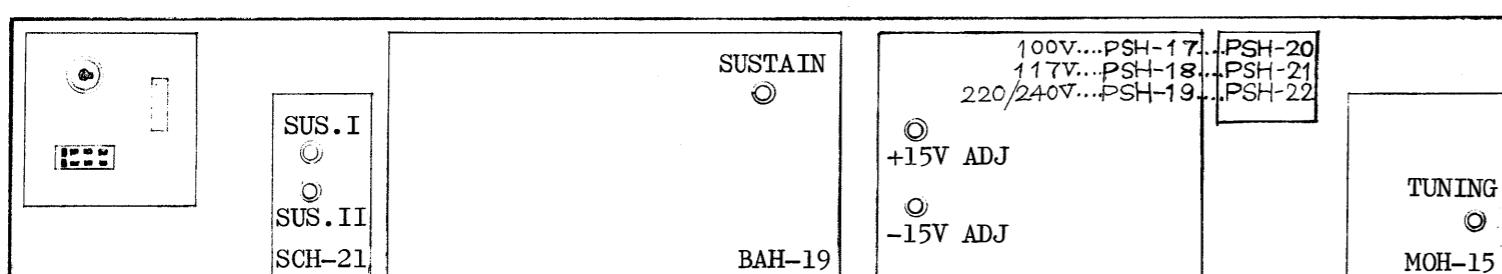
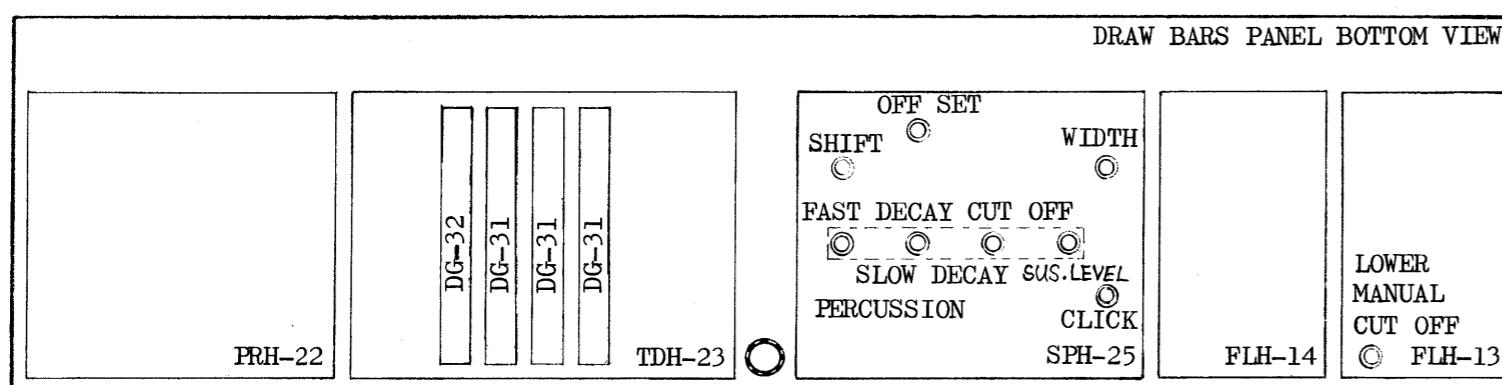
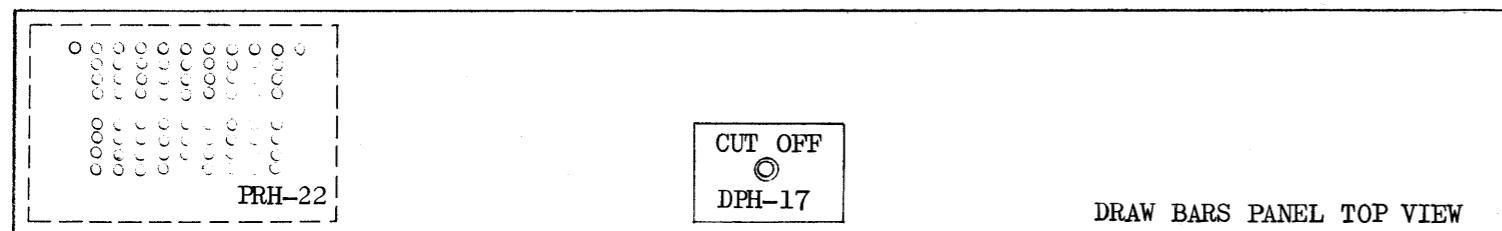
2. TO REMOVE SHIELD COVER.
Remove ten (10) screws (4 x 10 with washer) and two truss head tapping.



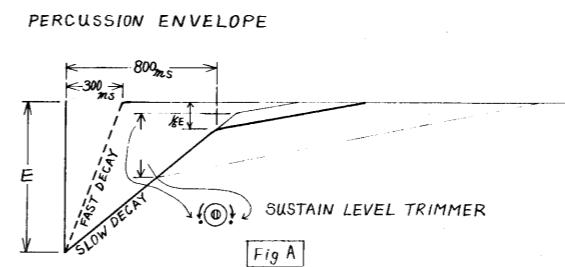
3. TO DISMOUNT UPPER MANUAL AND LOWER MANUAL.
Remove six (6) Hexagon socket head bolts.
Remove one (1) Truss head tapping.



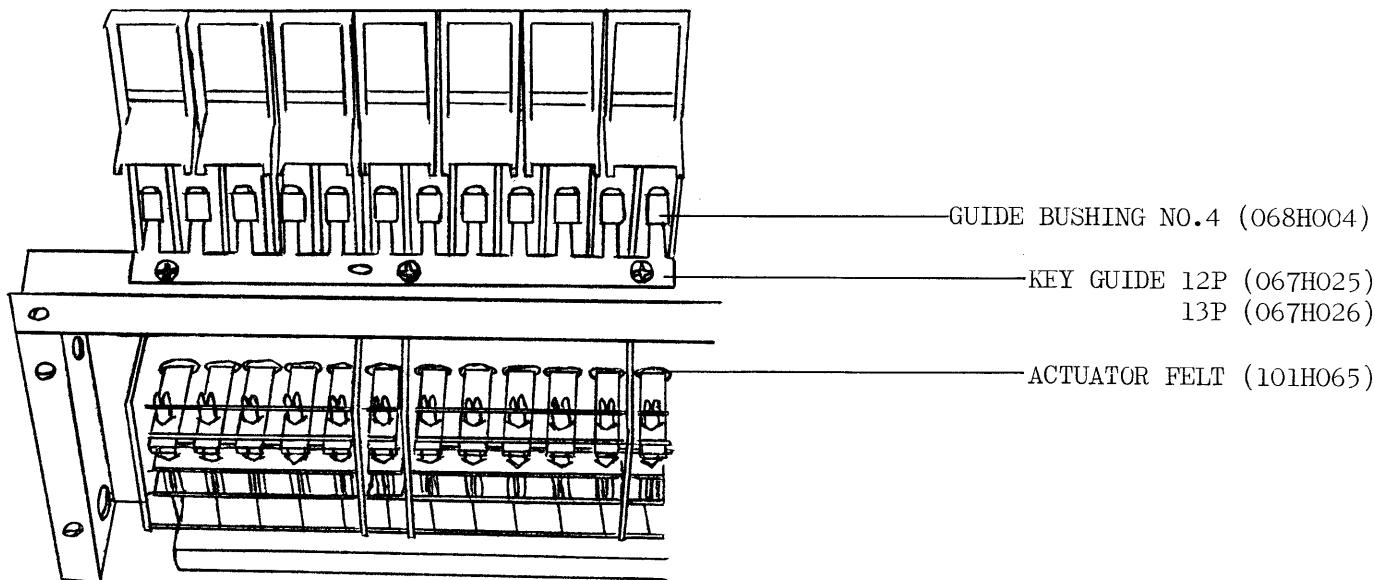
ELECTRICAL ADJUSTMENT



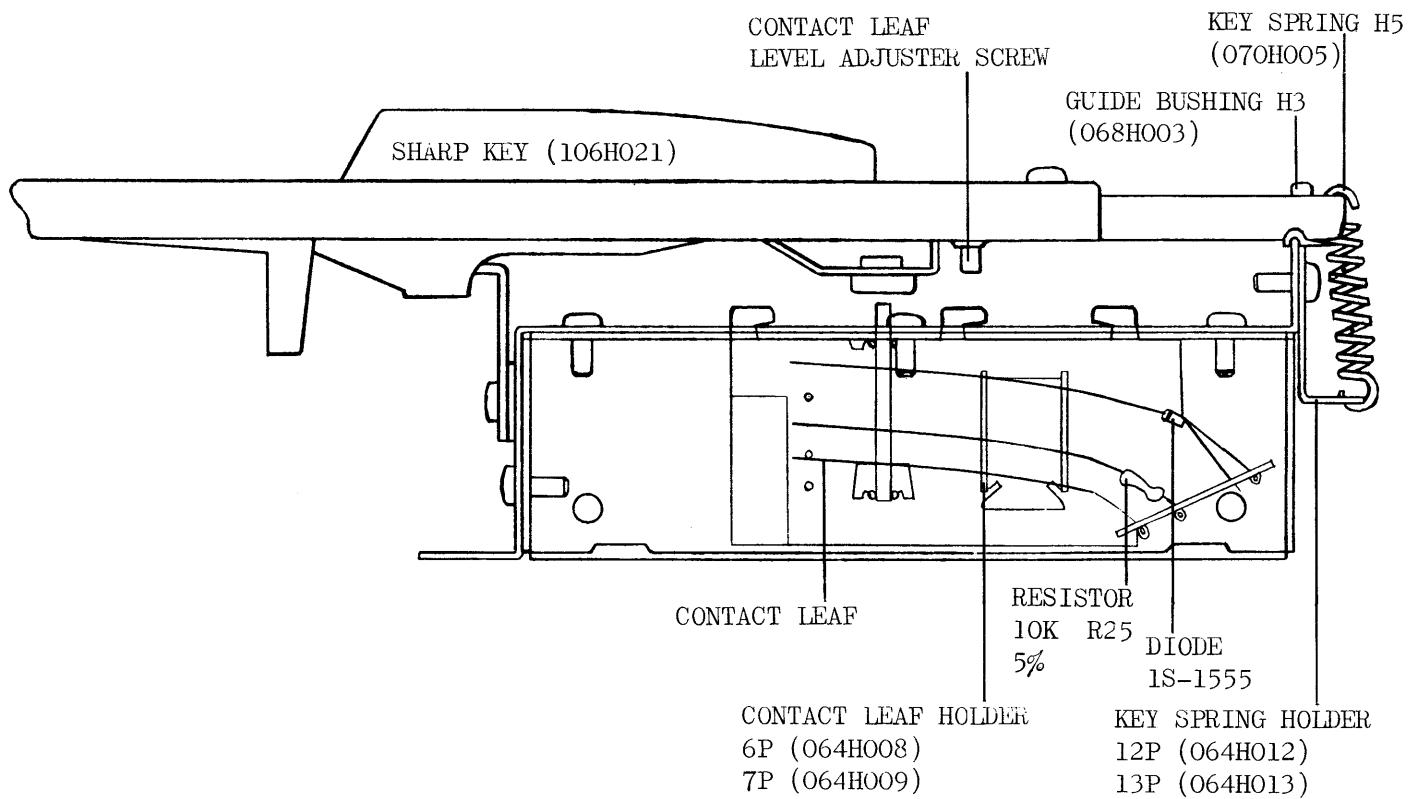
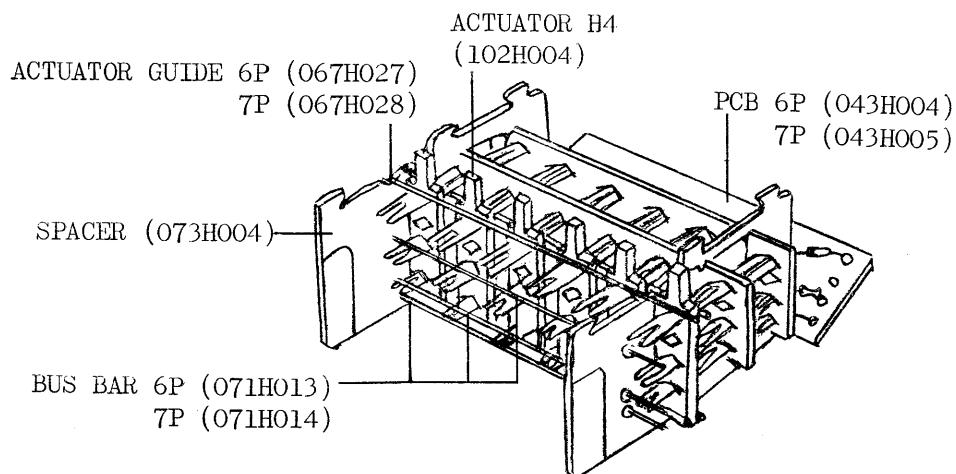
BOARD	ADJUSTMENT	POINT	SETTING	KEY PRESSED	SPEC.
DRAW BAR POWER SUPPLY [DPH17]	CUT OFF	3			
FILTER [FLH13]	CUT OFF	T.P.1			-7.0V
MASTER OSCILLATOR [MOH15]	TUNING		TUNE CONTROL at center, UP/DR 8'	U/M A3	442Hz b (①) #
	EXP. SENS.				MAX (①) MAX
PRE AMP [APH19]	REVO CH DIRECT CH VCA BALANCE	J4-4	UP/DR8' MAX, UP TAB(REVO&VIB) ON/OFF	U/M C3	Adjust for equal levels. REVO CH (①) DIRECT CH
	VIB. DEPTH	J1-4			1V P-P MIN (①) MAX
	VIB. SPEED				6.8Hz SLOW (①) FAST
BASS [BAH19]	BASS SUSTAIN TIME	J13-3		ANY KEY	1.2sec SHORT (①) LONG
SUSTAIN CONTROL [SCH21]	U/M SUSTAIN I	J1-4	PRE SET I SUSTAIN I	ANY U/M KEY	<80μs SHORT (①) LONG
	U/M SUSTAIN II		PRE SET I SUSTAIN II		200μs SHORT (①) LONG
	OFF SET			U/M KEY C4	Constant voltage with Flyback - up-off-down.
	SHIFT	J9-3		U/M KEY C6	5V (+1mV)
	WIDTH			U/M KEY C1	0V (-1mV)
SYNTH. PERCUSSION CONTROL [SPH25]	CUT OFF		PERC. 2ND, UP. DRAW BARS TAB, (UP DRAW BARS ALL OFF)	U/M KEY C2	C2 is about to sound.
	FAST DECAY TIME	J10-4	The above plus DECAY FAST - on.		300ms FAST (①) SLOW
	SLOW DECAY TIME		The above plus DECAY FAST - off.		800ms FAST (①) SLOW
	SUSTAIN LEVEL				1/6 See Fig. A
	CLICK ATTACK LEVEL	J4-4	CLICK ATTACK, BRILLIANCE POTENTIOMETER at minimum.	ANY U/M KEY	1V LOUD (①)
PRE SET [PRH22]	CLICK ATTACK LEVEL	J2-1			0.5V LOUD (①)



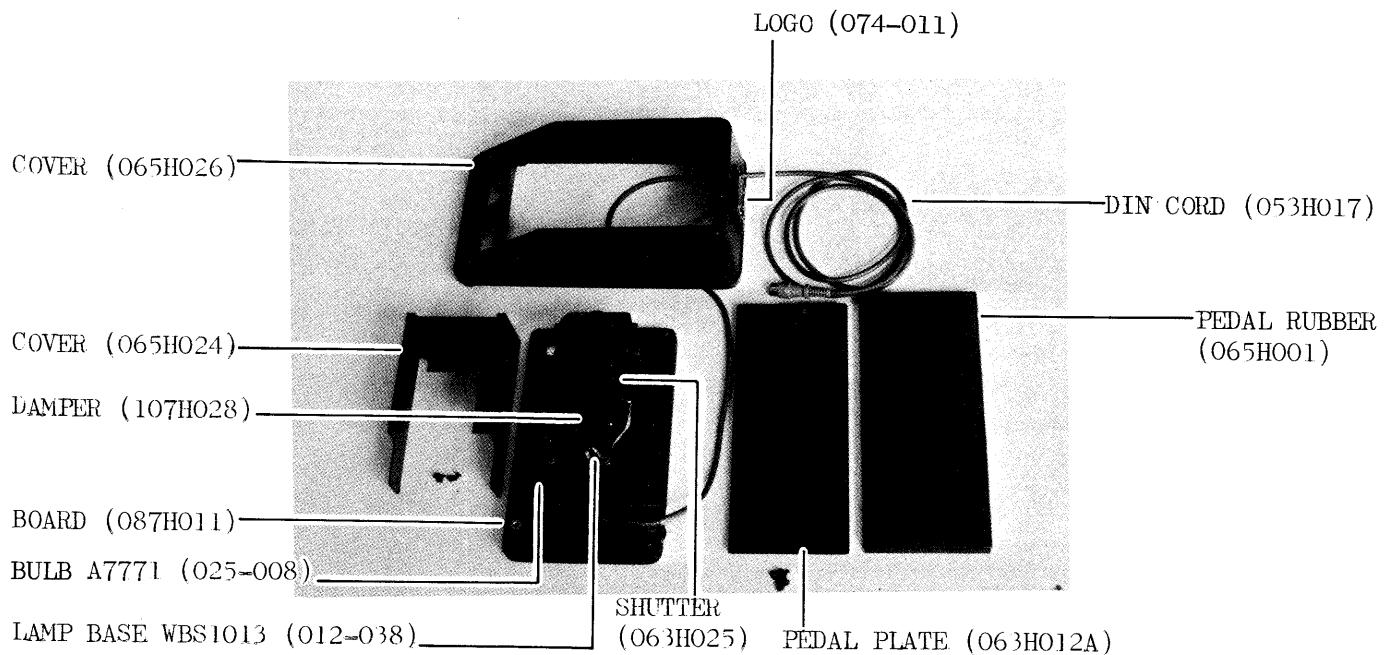
KEYBOARD PARTS



NATURAL KEY	
F	106H016
G	106H017
A	106H018
B	106H019
C	106H013
D	106H014
E	106H015
C'	106H020

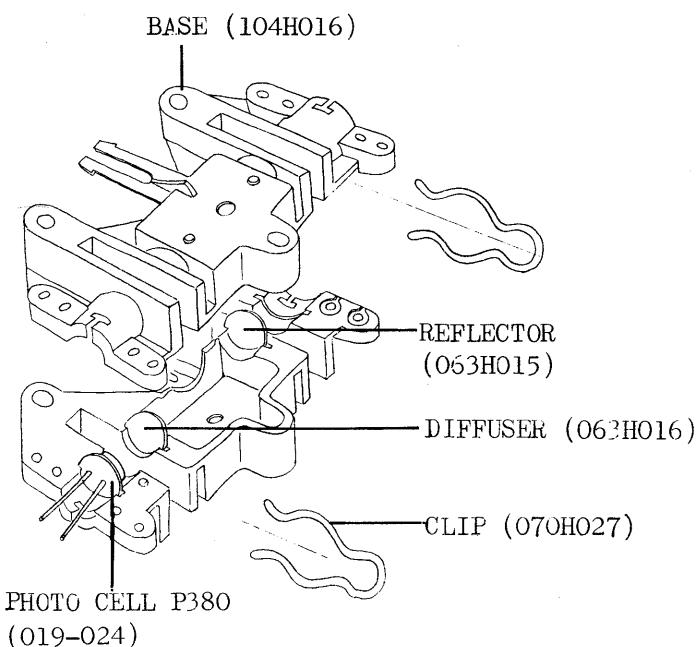
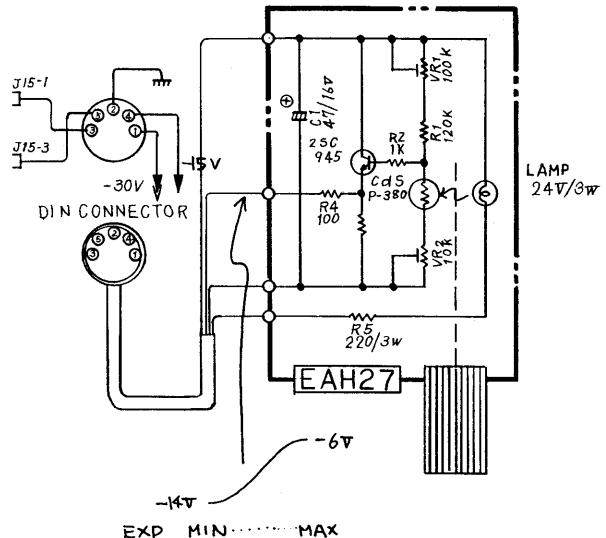
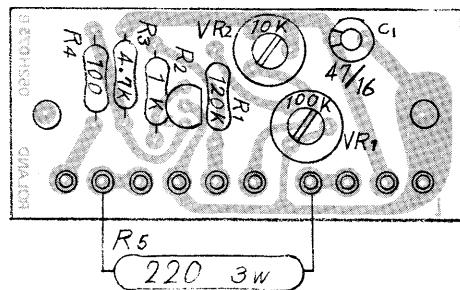


EXPRESSION PEDAL VKE-1

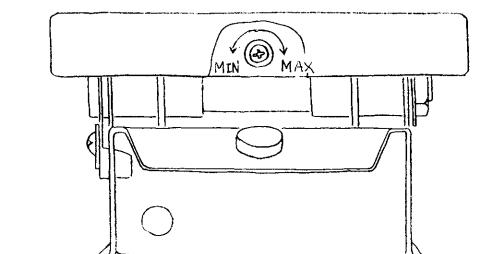


*SPARE BULB SERIAL NO. 690182 (VKE-1) AND SUBSEQUENT.
680174 (VKE-9)

PCB EAH-27 (149H027)

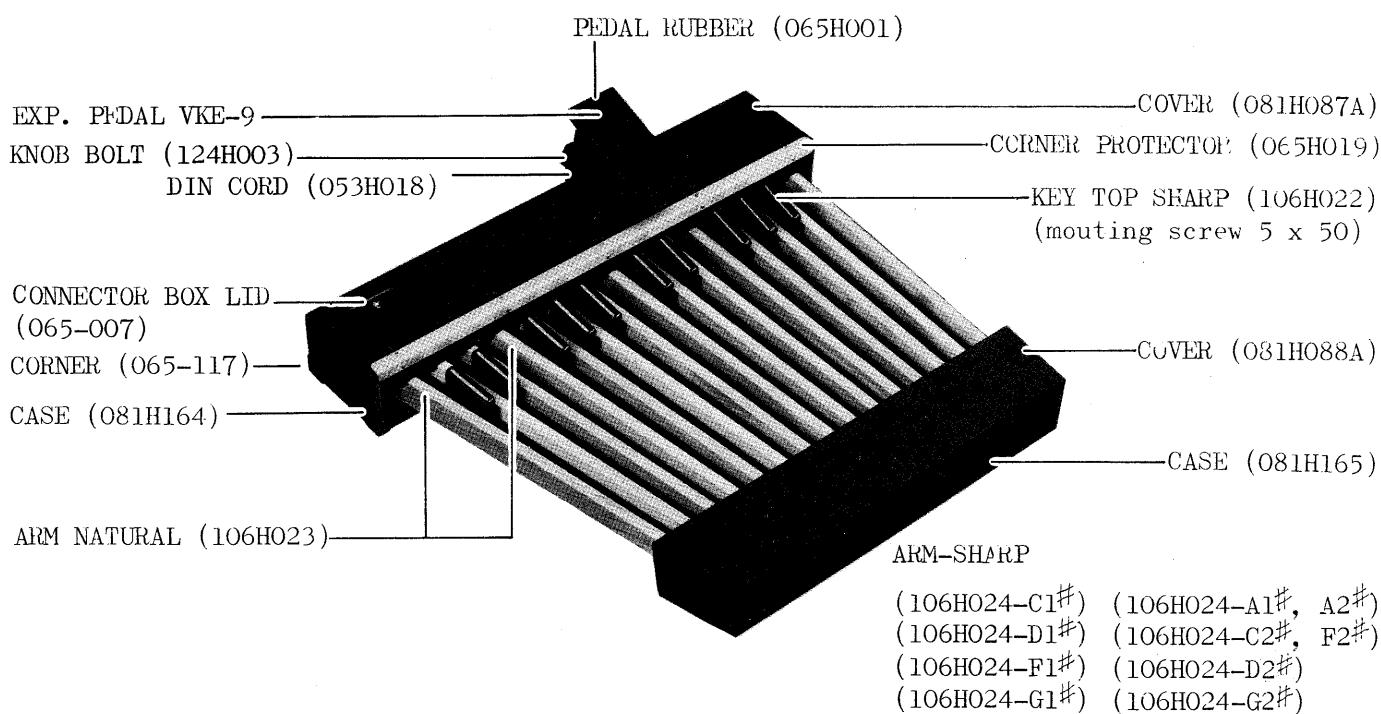


BRAKE ADJUSTOR SCREW.

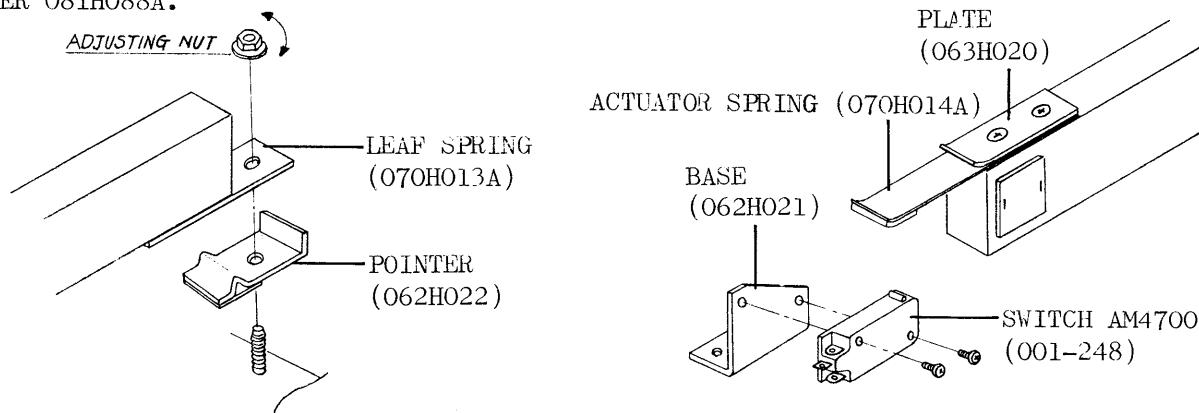


2ND VERSION
S/N 640120 AND HIGHER.

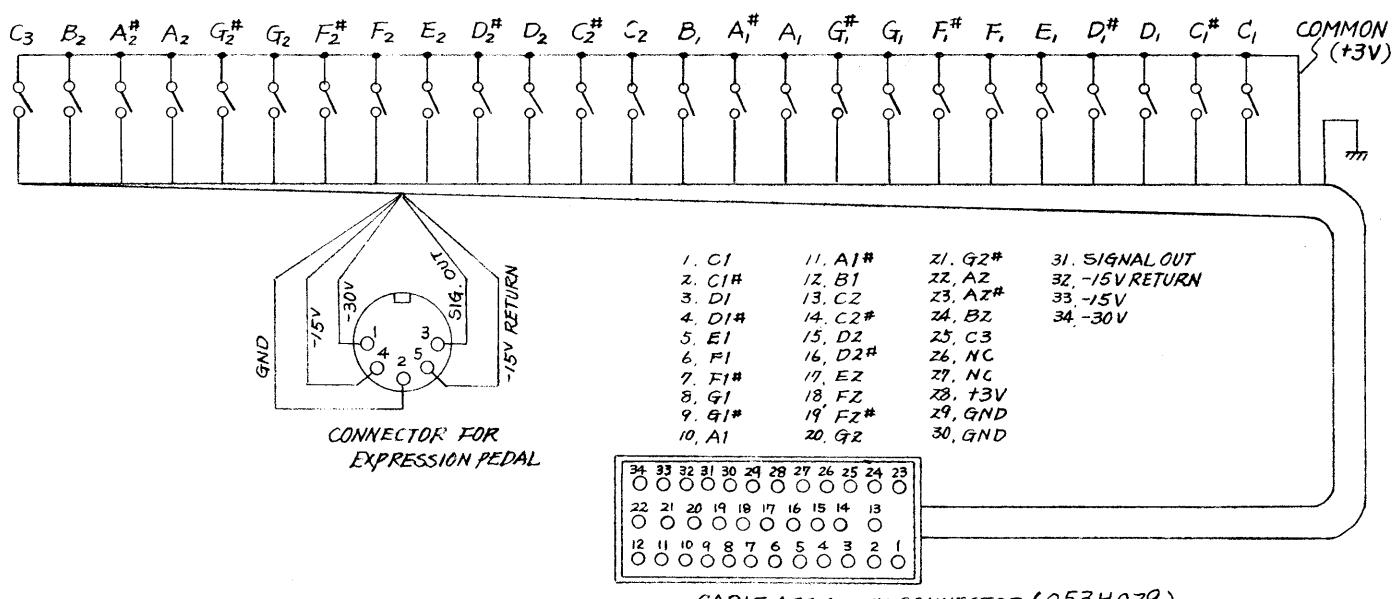
VKP-9 VKE-9



TO ADJUST SPRING ELASTICITY REMOVE
THE COVER 081H088A.



SCHEMATIC DIAGRAM



The parts list that follows includes parts used for VK-6 and VK-9.
 (VK-6) parts used for VK-6 only.
 (VK-9) parts used for VK-9 only.
 Other parts are used commonly for both VK-6 and VK-9.

PART NO.	PART AND DESCRIPTION
144H015	PCB ASSY AGH15 (052H055) (VK-6)
144H016	AGH16 (052H056) (VK-6)
141H020A	APH20A (052H069A) (VK-6)
149H020B	BAH20B (052H072B) (VK-6)
149H024C	TDH24C (052H084C) (VK-6)
149H026B	SPH26B (052H064B) (VK-6)
146H023B	PSH23B (100V) (052H071B) (VK-6)
146H024B	PSH24B (117V) (052H071B) (VK-6)
146H025B	PSH25P (220/240V) (052H071B) (VK-6)
146H020	PSH20 (100V) (052H085)
146H021	PSH21 (117V) (052H085)
146H022	PSH22 (220/240V) (052H085)
149H015	MOH15 (052H073)
145H014A	FLH14A (052H065A)
145H013A	FLH13A (052H065A) (VK-9)
144H011	AGH11 (052H055) (VK-9)
144H012	AGH12 (052H056) (VK-9)
144H013	AGH13 (052H057) (VK-9)
144H014	AGH14 (052H058) (VK-9)
149H016	SLH16 (052H070) (VK-9)
149H017	DPH17 (052H066) (VK-9)
149H019B	BAH19B (052H072B) (VK-9)
149H021	SCH21 (052H067) (VK-9)
149H022	PRH22 (052H061) (VK-9)
149H023A	TDH23A (052H068A) (VK-9)
149H025B	SPH25B (052H064B) (VK-9)
149H031	DGH31 (052H062) (VK-9)
141H019A	APH19A (052H069) (VK-9)
149H032	DGH32 (052H062) (VK-9)
146H017B	PSH17B (100V) (052H071B) (VK-9)
146H018B	PSH18B (117V) (052H071B) (VK-9)
146H019B	PSH19B (220/240V) (052H071B) (VK-9)
149H027B	EAH27B (052H075B) (VKE-1/9)
004-011	KEY BOARD ASSY SK-263A (VK-9, upper)
004-012	SK-262A (VK-9, lower)
004-013	SK-293A (VK-6, upper)
004-014	SK-292A (VK-6, lower)
017-024	SEMICONDUCTORS Transistor 2SA733P
017-052	Transistor 2SA640
017-034	Transistor 2SA682Y
017-128	Transistor 2SB596Y
017-023	Transistor 2SC945P
017-038	Transistor 2SC1222
017-090	Transistor 2SD526Y
017-016	FET 2SK30AGR
017-036	FET E412 (ITS30546)
018-014	Diode 1S2473
018-060	Diode 1S1885
018-057	Diode 1B2C1
018-058	Diode 1B2Z1
018-052	Zener 05Z-11L
018-024	Zener 05Z-15
018-083	Zener 05Z-18U (VK-9)
018-084	Zener 05Z-22U
019-025	LED SR103D (VK-6)
019-009	LED IRO601R (VK-9)
019-024	Cds cell P380 (VKE-1/9)
019-026	Photo coupler P653G35584
020-031	IC 723C
020-015	IC CA3080
020-024	IC 301A
020-062	IC μ PC-1458
020-010	IC TA7504M
020-105	IC CA3140
020-007	IC LM3216
020-155	IC BA643
020-156	IC AY30214
020-075	IC TC4049
020-040	IC TC4011
020-157	IC TC4532
020-158	IC TC4042
020-090	IC TC4051
020-006	IC DN811
020-159	IC LB1500 (VK-9)
020-050	IC LB1515 (VK-9)
POTENTIOMETERS	
028-1013	1M Ω , A, EVHCOAS20A16 PORTAMENTO TIME (VK-6)
031-079	100K Ω , B, EVHCHAS20B15 TUNE (VK-6)
031-105	20K Ω , B, Double, EWKDOAS15B24 VOLUME (VK-6)
028-990	10K Ω , B, EVHCOAS15B14 BRILLIANCE (VK-6)
028-989	1M Ω , A, EVHCOAS15A16 PORTAMENTO TIME (VK-9)
031-051	100K Ω , B, EVHCHAK15B15 TUNE (VK-9)
031-116	20K Ω , B, Double, EWKDOAK15B24 VOLUME (VK-9)
031-104	10K Ω , B, Double, EWKDOAS15B14 BRILLIANCE (VK-9)
TRIMMERS	
028-003	5K Ω , B, EVTR4AA00B53
028-004	10K Ω , B, EVTR4AA00B14
028-010	1M Ω , B, EVTR4AA00B16
029-103	500 Ω , B, PNB04C3A501H
030-245	20K Ω , EVT81AUS10B24 (VK-9)
RESISTOR	
044-090	1 Ω 1/2W, 5% Solid
044-099	5.6 Ω 1/2W, 5% Solid
044-102	10 Ω 1/2W, 5% Solid
044-128	1.5K Ω 1/2W, 5% Solid
044-094	2.2K Ω 1/2W, 5% Solid
044-599	10M Ω 1/2W, 5% Solid
044-193	10 Ω , 2W 10% Cement
044-195	15 Ω , 2W 10% Cement
044-240	82 Ω , 3W 10% Cement
044-366A	120 Ω , 10W 10% Cement

PART NO.	PART AND DESCRIPTION	PART NO.	PART AND DESCRIPTION
044-822	100Ω, 1/4W, 1% Metal film		JACKS
044-831	1.5kΩ, 1/4W, 1% Metal film	009-015	Mono HLJ-102-1-1 KCV OUTPUT, GATE OUTPUT, BEFORE EXP INPUT, AFTER EXP INPUT, NOMAL OUTPUT, BASS SEND, BASS RETURN, LOWER SEND, UPPER SEND
044-833	3.3kΩ, 1/4W, 1% Metal film	009-026	Stereo HLJ-0235-1-1 LOWER RETURN, UPPER RETURN BASS OUTPUT (VK-9)
044-911	4.7kΩ, 1/4W, 1% Metal	012-038	Lamp socket, WBS1013 (VKE-1/9)
044-912	5.1kΩ, 1/4W, 1% Metal film	042-060	Terminal block 500K/3DS (220/240V)
044-838	10kΩ, 1/4W, 1% Metal film		FUSE HOLDERS
044-905	18kΩ, 1/4W, 1% Metal film	012-025	F-6 (220/240V)
044-846	100kΩ, 1/4W, 1% Metal film	012-039	SN-5051 (117V)
044-856	470kΩ, 1/4W, 1% Metal film		CONNECTORS
044-860	1MΩ, 1/4W, 1% Metal film	010-055	450DB8FL, To Revo
045-003	6-103 Resistor network	010-205	77-MIP-9, To Leslie
045-004	7-103 Resistor network	010-206	MC-16LSF, VK-6 to VKP-6
	CAPACITORS	010-207	MC-34LSF, VK-9 to VKP-9
032-095	0.47μ, 35V, K, Tantalum	010-208	TCS-0250, To VKE-1
032-099	1μ, 35V, K, Tantalum	010-184	5045-06A
032-190	1μ, 50V, Non polar	010-185	5045-07A
032-237	1000μ, 35V, ECET35R102SU Electro.	010-190	5045-10A
032-176	2200μ, 50V, ECET50R222SU Electro.	010-107	5028-04A
035-043	0.01μ, 1KV, ECQE10103M (220/240V)	010-109	5028-06A
035-104	0.01μ, 125V, ECQUL1A103MC (100/117V)	010-111	5028-08A
035-164	330P, 50V, J, Styrole	010-036	2461-4C
	SWITCHES	010-037	2461-6C
001-154	Lever SW, ESL18113, REVO SPEED	010-098	5145-6A
001-116	Push SW, ESB718, REVO CANCEL	010-088	5051-6
001-136	Slide SW, SJ0726, OUTPUT LEVEL SELECT	010-202	5051-7
	PERCUSSION SELECT	010-204	5051-10
	SUSTAIN SELECT	010-028	2139-3
	DRAW BARS SELECT	010-008	2139-4
001-251	Rotary SW, ESR-E133F20E	010-009	2139-6
	FLYBACK MODE SELECT (VK-6)	010-010	2139-8
001-252	Rotary SW, ESR-E133F15A	010-089	2759TL Terminal pin
	FLYBACK MODE SELECT (VK-9)	010-090	2578TL Terminal pin
001-253	Sea saw SW, 2wixII, SEMKO POWER ON-OFF	010-147	EMCS1001 10 Pin
001-158	Slide SW, ESD3946, SEMKO,		(VK-6 until serial NO.700189)
	220V-240V SELECT	068-032	Colar bush, NA305
001-249	SW, ESB-63 (VKP-6)	068-029	Colar bush, NA310
001-248	Micro SW, AM4700 (VKP-9)	068-033	Colar bush, NA315
	KNOB	068-034	Colar bush, NB300
016-036	Knob No.36 Black, REVO SPEED		PARTS ORDERING INFORMATION
016-004	Knob No.4 White, REVO CANCEL		Name of part number of some of the parts is changed from those printed on previously issued parts list. When ordering replacement parts, be sure to follow the description on the present issue.
016-025	TK-1122 PORTAMENTO TIME		When ordering parts, be sure to include the following information:
	FLYBACK MODE SELECT	1. Model and Serial Number	
016-002	TUNE, VOLUME (VK-6)	2. Part Number	
	TUNE, VOLUME (VK-9)	3. A Description of the Part	
	TRANSFORMERS	This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the parts location and function as well as model and serial number of the unit.	
022H016C	Power transformer (100/117V)		
022H016D	Power transformer (220/240V)		
022-122	Output transformer, ST31		
022-034	Coil, 3.8H, 4R		
022-128	Coil, 10μH, P-7S		
	FUSES		
008-065	800mAT, SEMKO (220/240V)		
008-066	1AT, SEMKO (220/240V)		
008-206	1A, 250V, MGC-UL (117V)		
008-207	1.5A, 250V, MGC-UL (117V)		
008-238	10A, 250V, MGP-UL (Pig-tailed)		
025-008	Lamp 24V, 3W, A7771 (VKE-1/9)		
048-001	Heat sink (VK-9)		